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EDITED BY

G. S. BOULGER,

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HE PRAYETH BEST WHO LOVETH BEST
ALL THINGS BOTH GREAT AND SMALL;
FOR THE DEAR GOD WHO LOVETH US,
HE MADE AND LOVETH ALL.

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INDEX.*

(*The names of books reviewed are printed in italics.*)

Abinger and Shere Branch, 100, 156.
Address, President's, at Annual Meeting, 100.
Agricultural Economist, The, 14, 33, 50, 74, 134, 152, 175, 212, 231, 250.
Agriculture, Leaflets, Board of, 50, 74, 175, 212, 231, 250.
Albinism, 214.
Alien Flora of Britain, A Preliminary List of the, by S. T. Dunn, F.L.S., 73.
Alpine Flora for Tourists and Amateur Botanists, by Dr. Julius Hoffman, 133.
Amateur's Experience of Sub-Tropical Gardening, An, by H. Morden Bennett, M.A., 32.
American Botanist, The, 33, 50, 74, 94, 134, 152, 212, 250.
American S.P.C.A., 37th Annual Report of the, 50.
Ammophila Sabulosa, 4.
Ancient defensive Earthworks, Scheme for recording, 226.
Animal Life and the World of Nature, 211.
Animals, 194.
Animals' Friend, The, 14, 33, 50, 74, 134, 152, 175, 212, 231, 250.
Animals, Protection of, in the Federated Malay States, 226.
Animal Protection in New South Wales, 243.
Animal Studies, 249.
Animal World. The, 14, 33, 50, 74, 94, 134, 175, 212, 231, 250.
Answers to Correspondents, 20, 40, 60, 80, 140, 160, 180, 220, 240, 252.
Annual Meeting, 41, 61, 81, 101, 142.
Appeal to the Humane, An, 221.
Aquatic Insects, The Natural History of, by Prof. L. C. Miall, F.R.S., 50.
Ash Island, An Hour among the Fauna of, by J. M. Burton Durham, 167.
Assisted Emigration, 21.
Attacked by a Night Jar, 34.
Audubon Calendar for 1903, 14.
Audubon Societies in America, Practical Action taken by the, to afford Protection to Birds, 223.
Audubon Society, Report of the Massachusetts, 13.
Australasia, Protection of the Fauna and Flora of, 224, 243.
Autumn Evening on Wimbledon Common, An, by J. M. Burton Durham, 182.
Autumn Morning in Richmond Park, An, 23.
Autumn Ramble, An, by Edith M. Howes, 207.

Barber, Samuel, *The Cloud World, &c.*, by, 151.
Barley Bird? What is the, 74, 96.
Barnerd, Miss C. Obituary Notice, 83.
Bath Branch, 100, 156, 251.
Bats, 127.
Beachy Head, Winter below, by A. E. R., 71.
Bearing-Rein, The, 164.
Beautiful World, A. Journal of S.C.A.P.A., 133.
Beech Diseases, 218.
Beeches, 195, 218.
Bees stinging Drones, 76.
Bennett, H. Morden, *An Amateur's Experience of Sub-tropical Gardening*, by, 32.
Better late than never, 83.
Bindweed, The Great, 218.
Biological Investigation of the Hudson's Bay Region, North American Fauna, No. 22, by Edward A. Peeble, 13.
Bird Book, The, by A. J. R. Roberts, 229.
Bird Notes and News, 94, 175, 228.
Bird Protection in Egypt, 164.
Birds, Coast, Protection of, 165.
Birds Diving, 53, 214.
Birds in America, Practical Action taken by Audubon Societies to afford Protection to, 223.
Birds in 1902, Notes on London, by A. Holte Macpherson, M.A., LL.D., &c., 88.
Bird Life in Wild Wales, 246.
Birds of Prey, 175, 194, 217.
Birds, Society for the Protection of, 12th Annual Report, 73.
Birds, Spare the, 135.
Birds, Trays for Feeding, 135.
Birmingham and Midland Branch, 78, 138, 158, 251.
Blackgame, 33.
Blackwood, Lady Alicia, *My Dog Frizzle and Others*, by, 30.
Black Woodpecker, 16, 34.
Blue Tit, 195.
Board of Agriculture: Leaflets, 50, 74, 175, 212, 231, 250.
Book of the Cat, The, by Frances Simpson, 228.
Botany, Practical Rural, 203.
Branches, News from the, 19, 78, 100, 138, 156, 178, 238, 251.
Branch Work, 115.
Brighton Branch, 178.
British Carices, arranged by F. C. Crawford, 74.
British Scenery, The Spoliation of, 202.
Broken Eggs, 217.
Buchanan, H. R. M., and R. R. C. Gregory, *Lessons on Country Life*, by, 148.
Bullfinches in Bamboo, 230.

* We are again indebted to Mrs. Percy Myles for the preparation of the Index.—ED. *N.N.*

Bullfinches in Hats, 24.
Butterflies and Moths of Europe, by W. F. Kirby, F.E.S., 33, 56, 74, 94, 134, 152, 174.
Butterflies, Scarcity of, 218.

Canaries, Featherless, 195.
Cape Flowers at Home, by the Rev. F. C. Kolbe, 44.
Carices, British, arranged by F. C. Crawford, 74.
Carlyle and Darwin, A Note on, by George Pernet, 184.
Carrington, Miss, 243.
Cat, Book of the, by Frances Simpson, 228.
Cats, Polydactylous, 51, 74.
Chameleon's Egg, 76.
Children's Country Holidays, 119, 145.
Chiff-Chaff, 236.
Chiff-Chaff's Return, The, by the Rev. Canon H. D. Rawnsley, 132.
Cinnabar Moth, The, 54, 76.
City of London Entomological and Natural History Society Transactions for 1902, 74.
Clapton Branch (Lower Lea Valley), 138, 238.
Cloud World, The, &c., by Samuel Barber, 157.
Coast Birds, The Protection of, 165.
Cockroach, White, 195, 218.
Coghlan, T. A., *The Wealth and Progress of New South Wales*, 1900-1, by, 33.
Cold Weather, 75.
Collecting, 226.
Colorado Bulletin, University of, 134, 151.
Colour of the Sea, The, by Mrs. Somerville, 3.
Commonwealth, The, 152, 212, 231, 250.
Compound Nest, A, 233.
Comstock, Anna B., *Ways of the Six-footed*, by, 173.
Co-operative Housekeeping, 52.
Corelli, Miss Marie, at Annual Meeting, 108.
Costless Garden, A, 165.
Coulter, J. M., *Morphology of Spermatophytes*, 249.
Council Meetings, 19, 38, 50, 77, 99, 138, 156, 177, 219, 237, 251.
Country Life, Lessons on, by H. B. M. Buchanan and R. R. C. Gregory, 148.
Country Rambles, by Percival Westell, 133.
County Characteristics, by Walter Johnson, 204.
Cow-bird, 34, 75.
Crawford, F. E., *British Carices*, arranged by, 74.
Crows at Montreux, 95, 135.
Croydon Branch, 19, 78.
Cruel? Is Nature, by the Rev. E. T. Daubeny, 124, 175, 193, 212, 231.
Cruelty to a Seal, 201.

Dahlia, The, its History and Cultivation, by various authors, 93.
Damage by Gale at Selborne, 221.
Daubeny, The Rev. Edmund T., Is Nature Cruel? by, 124, 175, 193, 212, 231.
Death of an old Contributor, 23.
Devil's Coach Horse, 16.
Devonia, 212.
Devonshire Plants, The Protection of, 62.
Dew Ponds, 90.
Divers, 234.
Diving Birds, 53, 214, 234.
Donations and Subscriptions, 19, 39, 59, 78, 99, 138, 146, 178, 196, 219, 237.
Dove, H. Stewart, Southern Gulls, by, 172.
Dropt Eggs, 136, 195.
Duck and Swan, Encounter between a, 33.
Duck, Eider, 234.
Dunfermline's Opportunity, 243.
Dunn, S. T., F.L.S., *A Preliminary List of the Alien Flora of Britain, by*, 73.
Durham, G. M. B., An Autumn Evening on Wimbledon Common, by, 182.
Durham, G. M. B., An Autumn Morning in Richmond Park, by, 23.
Durham, G. M. B., An Hour amongst the Fauna of Ash Island, by, 167.
Dutt, William A., Hedge Parsley, 90.
Ealing Natural Science Society, Report and Transactions of the, 236.

Earwigs, 16, 35, 54, 77, 96.
East Cliff, Hastings, 164.
East Riding Branch, Yorks, 238, 251.
Educational Value of Nature Study, The, by J. C. Medd, M.A., 174.
Eggs, Broken, 217.
Eggs, Dropt, 136, 195.
Egypt, Bird Protection in, 142.
Eider-duck, 235.
Encounter between a Duck and a Swan, 33.
Eoliths, 33, 54, 77.
Epsom College Natural History Society, Report for 1902, 94.
Evelyn Club, John, 145.

Fall of Stones from the Sky, The, 56, 98.
Fauna and Flora of Australasia, Protection to the, 224.
Fauna, North America, No. 22, A Biological Investigation of the Hudson's Bay Region, by Edward A. Peeble, 13.
Fauna of Ash Island, An Hour amongst the, by G. M. Burton Durham, 167.
Featherless Canaries, 195.
Feather Pompoms and Trimmings, 222.
Federated Malay States, Protection of Animals in the, 226.
Feeding and Nesting Boxes, 52.
Feline Angler, A, 135.
Fern Bulletin, The, 33.
Field Club Committee, 21, 38.
Field Club Rambles, 79, 99, 138, 158, 178, 196, 219, 238.
Field Mice, Long-tailed, 15.
Field Mouse, or Field Vole and the Bank Vole, Notes on the, by G. T. Rope, 130.
Field Path Rambles, by Walker Miles, 93, 133, 174, 211.
Fish and Fishing, Walton and some Earlier Writers on, by R. B. Marston, 149.
Flora, Alpine, for Tourists and Amateur Botanists, by Dr. Julius Hoffmann, 133.
Flora of Britain, A Preliminary List of the Alien, by S. T. Dunn, F.L.S., 73.
Flora of the Island of Jersey, by L. V. Lester Garland, M.A., F.L.S., 231.

Flycatcher, The, 175.
Forestry, First Book of, by Filibert Roth, 13.
Foster Parents, 176.
Fox Moth, 137.
Francis, A. R., Springtime, by, 120.
Further Memorial to Richard Jefferies, 146.
Further South, by Lieut. E. H. Shackleton, 174.

Gardening, One and All, edited by E. Owen Greening, 73.
Garden of my Youth, The, by W. Percival Westell, 8.
Garden of Nereus, A, by S. D. W., 169.
Garland, L. V. Lister, M.A., F.L.S., *The Flora of the Island of Jersey*, by, 231.
Geological Rambles in East Yorkshire, by Thomas Sheppard, F.G.S., 173.
Geological Structure of Monzoni and Fassa, by Maria M. Ogilvie Gordon, 228.
Gilbert White and Leprosy, by George Pernet, 64, 95.
Gloucestershire Wild Garden, A, by the Curator, 149.
Gnats, 53.
Gordon, Maria M. Ogilvie, *The Geological Structure of Monzoni and Fassa*, by, 228.
Gray, The Rev. Dr., *Spurious Sports considered from an Educational Standpoint*, by, 174.
Great Bindweed, The, 218.
Greening, E. Owen, *One and All Gardening*, edited by, 73.
Gregory, R. R. C., and H. B. M. Buchanan, *Lessons on Country Life, &c.*, by, 148.
Grouse, 15.
Grouse, Wounded, 181.
Gulls, Southern, by H. Stuart Dove, F.Z.S., 172.

Haileybury Natural Science Society, Report for 1902, 50.
Hampshire Days, by W. H. Hudson, 147.
Hampstead Heath Extension, 145.
Hampstead Heath Protection, 241.
Hampstead Heath Protection Society, Sixth Annual Report, 50.
Hampstead (Northern Heights) Branch, 178, 251.
Hampstead Scientific Society. Report for 1902, 94.
Hampstead, Sweet, 250.
Happiness to be found in Love of Nature, by John Ruskin, 2.
Hastings, East Cliff, 164.
Hedge Parsley, by William Dutt, 90.
Henley Street, Stratford-on-Avon, 142, 226.
Heredity, Possible, 214.
Hillside, Rock, and Dale, by Oliver G. Pike, 30.
Hints, 74.
Hobby at Kenninghall, 217.
Hoffmann, Dr. Julius, *Alpine Flora for Tourists and Amateur Botanists*, by, 133.
Holly, The, 16, 36.
Home Counties Nature-Study Exhibition, 82, 165, 181, 227.
Horniman Museum, First Annual Report of the, 231.
Howes, Edith M., An Autumn Ramble, by, 207.
Hudson, W. H., *Hampshire Days*, by, 147.
Hudson, W. H., *The Naturalist in La Plata*, by, 209.
Humane, An Appeal to the, 221.
Humane Review, The, 175, 231, 14.
Humanitarian, The, 14, 15, 74, 94, 134, 175, 212, 231.
Humanitarian, The, League Leaflet, "*Snake Feeding at the Zoo*," 74.
Hybridisation, 237.

Inclement June and the Swifts, 195.
Indian, The, Textile, Mechanical and Electrical News, 231, 250.
Insect Folk, The, by Margaret W. Morley, 173.
Irish Naturalist, The, 14, 33, 50, 74, 94, 134, 151, 175, 212, 231.
Irish Songs of Summer and Winter, Four Old, Edited by Kuno Meyer, 134.
Is Nature Cruel? by the Rev. E. T. Daubeny, 124, 175, 193, 212, 231.

Jack Killed by Hail, 176, 217.
Jehh, Dorothy, Mrs. Beverley Ussher and, *Observation Lessons on Plant Life*, by, 230.
Jefferies, Richard, Further Memorial to, 146.
Jersey, Flora of the Island of, by L. V. Lester Garland, M.A., F.L.S., 231.
John Evelyn Club, 145.
Johnson, the Rev. W., F.L.S., *Nature and Naturalists*, by, 93.
Johnson, Walter, County Characteristics, by 204.
Jordan, D. S., *Animal Studies*, 249.

Kearton, Richard, F.L.S., *Gilbert White's Natural History of Selborne*, edited by, 111.
Kelsall, The Rev. J. E., The Selbornian Parson from within, by, 85.
Kerr, Richard, *Nature Curious and Beautiful*, 247.
Kestrel, 53, 74.
Kingfisher Killed by Jack, 217.
Kingsley, Charles, *The Water Babies*, 93.
Kirby, F. W., F.E.S., *Butterflies and Moths of Europe*, by, 14, 33, 50, 74, 94, 134, 152, 174.
Kolhe, the Rev F. C., Cape Flowers at Home, by, 44.

Lady's Smock, Double, 137.
Lagier, Mlle. P., *Le Massacre des Oiseaux, Appel aux Femmes*, by, 174.
Larks at the London Hospital Ball, 145.
Last Night at Magdalen, The, by W. A. S., 187.
Late Nesting, 234.
Late Nesting of the Wood Pigeon, 237.
Late Stay of Swifts, 216.
Leaflets, 79.
Leicester Corporation Museum and Art Gallery, 13th Report, 231, 250.
Leprosy, Gilbert White and, by George Pernet, 64, 95.
Lessons on Country Life, &c., by H. E. M. Buchanan and R. R. C. Gregory, 148.
Letters Received, 140, 160, 180, 220, 240.
Lincolnshire Garden, Notes from, 250.

Liverpool Kyrle Society, Report for 1902, 94.
Local Names, A Few, 213.
Local Secretaries for the Selborne Society, a Plea for, 142.
London Birds in 1902, Notes on, by A. Holte Macpherson, 88.
Macpherson, A. Holte, M.A. LL.D., Notes on London Birds in 1902, by, 88.
Malay States, Federated, Protection of Animals in the, 226.
Marsh Tit, 53, 75.
Martin, E. A., F.G.S., A Neglected Village, 63.
Marston, R. B., *Walton and some Earlier Writers on Fish and Fishing*, by, 149.
Marylebone Centre Magazine, The, 30.
Massacre des Oiseaux, Le: Appel aux Femmes, by Mlle. P. Lagier, 174.
Maternal Impressions, 6.
Medd, J. C., M.A., *The Educational Value of Nature Study*, by, 174.
Memorial to Richard Jefferies, Further, 146.
Meteoric Stones, 17, 36, 56.
Meteor of January 14, The, 58.
Meyer, Kuno, *Four Old Irish Songs of Summer and Winter*, Edited by, 134.
Miall, Prof. L. C., F.R.S., *The Natural History of Aquatic Insects*, by, 50.
Mice, Singing, 233.
Migrants, Dates of the Arrival of, in Gloucestershire, 176.
Miles, Walker, *Field Path Rambles*, 93, 133, 174, 211.
Miller, W. J. C., Death of an Old Contributor, 43.
Missel Thrush and Irish Yew, by the Rev. Canon Rawnsley, 87.
Mitchell, Alice E., and the Rev. Canon Steward, *The Nature Student's Note Book*, by, 50.
Mole, A Plea for the, 14, 33, 51.
Mole, The, 233.
Morley, Margaret, W., *The Insect Folk*, 173.
Murderous Millinery, 233.
My Dog Frizzle and Others, by Lady Alicia Blackwood, 30.
My Nature Note-book, by E. Kay Robinson, 93.

Names, A few Local, 213.
National Trust for Places of Historic Interest or Natural Beauty, 163.
Natural History Notes and Queries, 14, 33, 51, 74, 95, 134, 152.
Natural History Notes, 175, 190, 212, 231.
Natural History Queries, 177, 195, 219, 236.
Natural History of Aquatic Insects, The, by Prof. L. C. Miall, F.R.S., 50.
Natural History of the Lower Animals, 248.
Natural History, Selborne, Gilbert White's, edited by Richard Kearton, F.R.S., 11.
Naturalist in La Plata, The, by W. H. Hudson, F.Z.S., 209.
Naturalist's Journal, The, 14.
Naturalist, The, 14, 74, 94, 134, 175.
Nature and Naturalists by the Rev. W. Johnson, F.L.S., 93.
Nature Cruel? Is, by The Rev. Edmund T. Daubeny, 124, 175, 193, 212, 231.
Nature, Curious and Beautiful, 247.
Nature in the Early Months, by E. W. H., 65.
Nature Knowledge: its Progress and Interpretations, &c., by Wilfrid Mark Webb, 30.
Nature Note-book, My, by E. Kay Robinson, 93.
Nature Photographic Competition, 45.
Nature's Riddles, 247.
Nature Student's Note Book, The, by the Rev. Canon Steward and Miss A. E. Mitchell, 50.
Nature Exhibition, Home Counties, 82, 165, 181, 227, 244.
Nature Study (late Naturalist's Journal), 14, 33, 50, 74, 94.
Nature Study Prize at Hammersmith Arts and Crafts Exhibition, 115.
Nature Study, The Educational Value of, by J. C. Medd, M.A. 174.
Nature Study Union, The School, 83.
Neglected Village, A, by Edward A. Martin, F.G.S., 63.
Nest, A Compound, 233.
Nest of Swallow, 216.
Nesting, Late, 234.
Nesting Places, Unusual, 136, 176.
New Forest Natural History Society, A, 22.
New Members, 19, 39, 59, 77, 99, 138, 156, 178, 196, 219, 237, 251.
News from the Branches: Abinger and Shere, 100, 156; Bath, 100, 156; Birmingham and Midland, 78, 138, 158; Brighton, 178; Clapton (Lower Lea Valley), 138, 238; Croydon, 19, 78; East Riding, Yorks, 238: Hampstead (Northern Heights), 178.
Nightjar, Attacked by a, 34.
Notices for Railway Stations, Hotels, Inns, Cyclists' Rests, &c., 79.
Nottingham Naturalists' Society, Fiftieth Annual Report, &c., 74.
Nunn, Joseph P., *Sixteen Years with the Common Sparrow*, by, 73.
Nut-Tree Tussock, The, 54.

Obituary :—
Bernard, Miss E., 83.
Miller, W. J. C., 43.
Richards, William Joseph, 182.
Observation Lessons on Plant Life, &c., by Mrs. Beverley Ussher and Dorothy Jebb, 230.
Occasional Paper of the Bucks, South Oxon. and North Hants Footpaths and Open Spaces Society, 74.
Ocean Waves, 185.
Officers of the Selborne Society for 1902, 108.
Oiseaux, Le Massacre des, Appel aux Femmes, by Mlle. P. Legier, 174.
One and All Gardening, edited by E. Owen Greening, 73.
Orchis maculata, Variations in, 177.
Our Animal Friends, 14, 33, 50, 74, 94, 134, 175, 212, 231.
Otter, A Plea for the, 203.
Oysters and Typhoid, 137.

Parents' Review, The, 50, 74, 94, 152, 175.
Parsley Fern, The, 22, 42.
Pearson's Magazine, 94.
Pernet, George. A Note on Carlyle and Darwin, by, 184.
Pernet, George, Gilbert White and Leprosy, 64, 95.

Pheasants Eating Hazelnuts, 75.
Photography as the Handmaid of Science, 227.
Pictorial Postcards, Nature Series, 152.
Piebald Sparrows, 226.
Peeble, Edward A., *A Biological Investigation of the Hudson's Bay Region, North American Fauna*, No. 92, by, 13.
Pied Wagtail, Abnormal Appearance of the 52.
Pike and Geese, 136, 176.
Pike, Oliver G., *Hillside, Rock and Dale*, by, 30.
Plant Life, Observation Lesson on, by Mrs. Beverley Ussher and Dorothy Jebb, 230.
Plants, Rare, 136.
Polar Thunder, 137.
Polecats and Stoats, 15, 51.
Pollution of Windermere, 202.
Polydactylous Cats, 51, 74.
Pompoms, Feather and Trimming, 222.
Possible Heredity, 214.
Preservation of Stonehenge, 163.
Preservation of Wild Plants in Gloucestershire, 115.
Preservation of Thames, 115.
President's Address at Annual Meeting, 100.
Proceedings of the South London Entomological and Natural History Society, 1902, 134.
Protection, Bird, in Egypt, 142.
Protection of Animals in the Federated Malay States, 226.
Protection of Coast Birds, 165.
Protection of Devonshire Plants, 62.
Protection to Birds in America, Practical Action taken by Audubon Societies to afford, 223.
Protection to the Fauna and Flora of Australasia, 224.
Protest, A., 142, 165.
Publications of the Society, Recent, 62.
Public Works, 174.
Puff-Ball, or Devil's Snuff-box, 195.

Rabbits and Magpies, 236.
Rabbit, The, 51.
Rare Plants, 136.
Rare Visitors, 233.
Rats, 51, 219.
Rawnsley, the Rev. Canon H. D., The Chiff-Chaff's Return, by, 132.
Rawnsley, the Rev. Canon H. D., The Missel Thrush and Irish Yew, by, 87.
Report and Transactions of the Ealing Natural Science, &c., Society, 231.
Report and Transactions of the Nottingham Naturalists' Society, 50*th Annual*, 74.
Report and Proceedings of the Hampstead Scientific Society, 1902, 95.
Report of the American S.P.C.A., 37*th Annual*, 50.
Report of the Epsom College Natural History Society for 1902, 94.
Report of the Haileybury Natural Science Society for 1902, 50.
Report of the Hampstead Heath Protection Society, 6*th Annual*, 50.
Report of the Horniman Museum, 1*st Annual*, 231.
Report of the Leicester Corporation Museum and Art Gallery, 231.
Report of the Liverpool Kyrle Society for 1902, 94.
Report of the Massachussetts Audubon Society, 13.
Report of the Rugby School Natural History Society, 1902, 134.
Report of the Society for the Protection of Birds, 12*th Annual*, 73.
Reviews and Exchanges, 11, 30, 50, 73, 93, 133, 147, 173, 209, 228, 246.
Richards, William Joseph, Obituary Notice, 182.
Richmond Park, An Autumn Morning in, by G. M. B. Durham, 23.
Richmond View, 142.
Ring-ouzels, 16.
Robinson, E. Kay, *My Nature Note-book*, by, 93.
Robins, 15, 216.
Rope, G. T., Notes on the Short-tailed Field Mouse and the Bank Vole, by, 130.
Roth, Filibert, *A First Book of Forestry*, by, 13.
Rugby School, Natural History Society Report for 1902, 93.
Rural Botany, Practical, 203.
Ruskin, John, The Happiness to be found in Love of Nature, 2.
Ruskin, John, The Sea after a Gale, by, 208.

Sap of Trees, The, 188, 218.
Save the Skylarks, 42.
Scarcity of Butterflies, 218.
Scenery, The Spoliation of British, 202.
Scherren, Henry, *Natural History of Lower Animals*, 248.
School Nature Study Union, The, 83.
Sexes of White Stoats, 134, 175, 194.
Sea after a Gale, The, by John Ruskin, 208.
Sea Water, 27.
Seal, Gross Cruelty to a, 201.
Selborne, A Lost Charm to, 62.
Selborne, Damage by Gale at, 221.
Selborne, House to Let at, 84.
Selborne, Proposed Visit to Selborne, 41, 62, 82.
Selborne Saturday Afternoons, 20, 39, 59, 78, 99, 240, 252.
Selborne Society's Badge, 80.
Selborne Society's Notices, 19, 38, 59, 77, 99, 138, 156, 177, 196, 219, 237, 251.
Selborniana, 1, 21, 41, 61, 81, 103, 115, 161, 182, 201, 221.
Selbornian Parson from Within, The, by the Rev. J. E. Kelsall, 85.
Selbornian Work, A New Opening for, 119, 145.
Shackleton, Lieut. E. H., *Furthest South*, by, 174.
Sharpe, Dr. Bowdler, Lecture on Selborne at Annual Meeting, 114.
Shepheard-Walwyn, H.W., *Nature's Riddles*, 247.
Sheppard, Thomas, F.G.S., *Geological Rambles in East Yorkshire*, by, 173.
Shrews, 135.
Silica in Sea Water, 56.
Simpson, Frances, *Book of the Cat*, by, 228.
Singing Mice, 232.

Six-footed, Ways of the, by Anna B. Comstock, 173.
Sixteen Years with the Common Sparrow, by Joseph P. Nunn, 73.
Skuas, 234.
Slug, A Thread-spinning, 212.
Slugs, 77, 96.
Smoke and Vegetation, 136.
Snake Feeding at the Zoological Gardens, Humanitarian League Leaflet, 74, 164.
Society for the Protection of Birds, 12th Annual Report of the, 73.
Somerville, Mrs., The Colour of the Sea, by, 3.
South Eastern Union, Temporary Museum, 23, 162.
South London Entomological and Natural History Society, 1902, Proceedings of the, 134.
Sowerby's "English Botany" Supplement, 23.
Spare the Birds, 135.
Sparrow, Piebald, 236.
Sparrows, 52, 75.
Sparrows, Sixteen Years with the Common, by Joseph P. Nunn, 73.
Spiral Torsion in Plant Growth, 191.
Spoliation of British Scenery, The, 202.
Springtime, by A. R. Frances, 188, 218.
Spurious Sports Considered from an Educational Standpoint, by the Rev. Dr. Gray, 174.
Squirrels Carrying Young, 214.
Squirrels in Scotland, 15.
Steward, the Rev. Canon, and Miss Alice E. Mitchell, *The Nature Student's Note Book*, by, 50.
Stoat and Mole, 219.
Stoats, Polecats, and 51, 95, 134, 175, 194.
Stonehenge, Preservation of, 163.
Stratford on-Avon, Henley Street, 142, 226.
Swallow's Nest, 34, 216.
Swanley Horticultural College, 244.
Swifts, 195, 216, 233.
Subscriptions and Donations, 19, 39, 59, 78, 99, 138, 156, 178, 196, 219, 237, 251.

Thames Preservation, 115.
Thunderbolts, 77, 96.
Thunderstorms far North, 177.
Tiger Cub that Ate its Own Mother, A, by A. Yaldwyn, Lt.-Col. D.S.O., 29.
Toads 237.
Tortoise and Dog, 236.
Transactions of the City of London Entomological and Natural History Society for 1902, 74.
Trays for Feeding Birds, 135.
Trees, The Sap of, 188, 218.
Trout, Tame, 34.

Un-Selbornian Parson, The, 83.
Ussher, Mrs. Beverley, and Dorothy Jebb, *Observation Lessons on Plant Life*, by, 230.

Variations in Orchis maculata, 177.
Victorian Naturalist, The, 43, 74, 134, 152, 175, 212, 231.
Vivisection, 227.
Vole, Field and Bank Vole, Notes on the Short-tailed Field Mouse, or, by G. T. Rope, 133.

Wagtails and Flycatchers, 217.
Waiting for the Tiger's Approach, by Lt.-Col. A. Yaldwyn, D.S.O., 146.
Wakes, The, 21.
Walpole-Bond, J. A., *Bird Life in Wild Wales*, 246.
Walton and some Earlier Writers on Fish and Fishing, by R. B. Marston, 149.
Water Babies, The, by Charles Kingsley, 93.
Ways of the Six-footed, by Anna B. Comstock, 173.
Wealth and Progress of New South Wales, 1900-1, by T. A. Coghlan, 33.
Webb, Wilfred Mark, *Nature Knowledge, its Progress and Interpretation, &c.*, by, 30.
Wellcome Physiological Research Laboratory, The, 152.
Westell, W. Percival, *Country Rambles*, 133.
Westell, W. Percival, The Garden of My Youth, 8.
White, Mrs. C. A., *Sweet Hampstead*, 250.
White's Stoats, 134, 175, 194.
White's Thrush, 53.
Wild-fowl in Euston Park, 95.
Wimbledon Common, An Autumn Evening on, G. M. B. Durham, 182.
Windermere, Pollution of, 203.
Winter Below Beachy Head, by A. E. R., 71.
Winter Hoards, 51.
Winter, The Woods in, by Early Bird, 67.
Woodpecker, Black, 16, 34.
Woodpeckers, 53.
Woodpigeon, Late Nesting of the, 237.
Woods in Winter, The, by Early Bird, 67.
Wounded Grouse, 181.

Yaldwyn, Lt.-Col. A., D.S.O., A Tiger Cub that Ate its Own Mother, by, 29.
Yaldwyn, Lt.-Col. A., D.S.O., Waiting for the Tiger's Approach, by, 146.

Nature Notes:

The Selborne Society's Magazine.

No. 157. JANUARY, 1903. Vol. XIV.

OBJECTS OF THE SOCIETY.

To preserve from unnecessary destruction such wild birds, animals and plants as are harmless, beautiful, or rare. To discourage the wearing and use for ornament of birds and their plumage, except when the birds are killed for food or reared for their plumage. To protect places and objects of antiquarian interest or natural beauty from ill-treatment or destruction. To promote the study of natural history.

SELBORNIANA.

So Picturesque!—After Saturday's run with Sir John Heathcote Amory's staghounds there occurred what the *Tiverton Gazette* regards as an "interesting incident." After the stag had been killed, Captain Amory, who had left the field, returned with his wife and nurse, the latter "carrying in her arms Captain Amory's twelve-months'-old son. With all due solemnity the child was 'blooded,' a nice little red patch being put on the infant's left cheek by Captain Amory. . . . It was also noted that the inevitable camera (in the hands of fair ladies) 'snapped' what will no doubt make a pretty picture." "Pretty" is surely the last epithet to apply to this rather messy proceeding, which when performed at the age of one seems to lose even its ordinarily modest measure of significance. If "blooding" were unknown in this country, and this description had been given of it as a strange practice existing, say, among the Boers, we wonder what adjectives would have been thought appropriate for the horrid customs of that barbarous and untutored race.—*Morning Leader.*

THE HAPPINESS TO BE FOUND IN LOVE OF NATURE.

ALL real and wholesome enjoyments possible to man have been just as possible to him, since first he was made of the earth, as they are now; and they are possible to him chiefly in peace. To watch the corn grow, and the blossoms set; to draw hard breath over ploughshare or spade; to read, to think, to love, to hope, to pray,—these are the things that make men happy; they have always had the power of doing these, they never *will* have power to do more. The world's prosperity or adversity depends upon our knowing and teaching these few things: but upon iron, or glass, or electricity, or steam, in no wise.

And I am Utopian and enthusiastic enough to believe that the time will come when the world will discover this. It has now made its experiments in every possible direction but the right one: and it seems that it must, at last, try the right one, in a mathematical necessity. It has tried fighting, and preaching, and fasting, buying and selling, pomp and parsimony, pride and humiliation,—every possible manner of existence in which it could conjecture there was any happiness or dignity; and all the while, as it bought, sold, and fought, and fasted, and wearied itself with policies, and ambition, and self-denials, God had placed its real happiness in the keeping of the little mosses of the wayside, and of the clouds of the firmament. Now and then a wearied king,* or a tormented slave, found out where the true kingdoms of the world were, and possessed himself, in a furrow or two of garden ground, of a truly infinite dominion. But the world would not believe their report, and went on trampling down the mosses, and forgetting the clouds, and seeking happiness in its own way, until, at last, blundering and late, came natural science; and in natural science not only the observation of things, but the finding out of new uses for them. Of course the world, having a choice left to it, went wrong as usual, and thought that these mere material uses were to be the sources of its happiness. It got the clouds packed into iron cylinders, and made them carry its wise self at their own cloud pace. It got weavable fibres out of the mosses, and made clothes for itself, cheap and fine,—here was happiness at last. To go as fast as the clouds, and manufacture everything out of anything,—here was paradise, indeed!

And now, when, in a little while, it is unparadised again, if there were any other mistake that the world could make, it would of course make it. But I see not that there is any other; and, standing fairly at its wit's end, having found that going fast, when it is used to it, is no more paradisiacal than going slow;

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* See the description of the abdication of Diocletian. Gibbon, chap. xiii.

and that all the prints and cottons in Manchester cannot make it comfortable in its mind, I do verily believe it will come, finally, to understand that God paints the clouds and shapes the moss-fibres, that men may be happy in seeing Him at His work, and that in resting quietly beside Him, and watching His working, and—according to the power He has communicated to ourselves, and the guidance he grants—in carrying out His purposes of peace and charity among all His creatures, are the only real happinesses that ever were, or will be, possible to mankind. RUSKIN, *Modern Painters.*

THE COLOUR OF THE SEA.

THE purest spring is not more limpid than the water of the ocean: it absorbs all the prismatic colours, except that of ultramarine, which, being reflected in every direction, imparts a hue approaching the azure of the sky. The depth of the blue depends upon the quantity of salt contained in the water. In salt-works the brine assumes a deeper blue the longer the evaporation is continued: that is the reason of the deep azure of the Mediterranean, the Gulf Stream, and the sea in the region of the trade winds. In the Indian Ocean the colour is so intense that it has been poetically called the Black Waters. The light green of the North Sea and other polar waters is owing to the lesser proportion of salt. The colour of the sea varies with every gleam of sunshine or passing cloud, although its true tint is always the same when seen sheltered from atmospheric influence. The reflection of a boat on the shady side is often of the clearest blue, while the surface of the water exposed to the sun is bright as burnished gold. The waters of the ocean also derive their colour from animalcules of the infusorial kind, vegetable substances, and minute particles of matter. It is white in the Gulf of Guinea: off California, the Vermilion Sea is so called on account of the red colour of the infusoria it contains. The same red colour was observed by Magellan near the mouth of the River Plate. The Persian Gulf is called the Green Sea by Eastern geographers, and there is a strip of green water off the Arabian coast so distinct that a ship has been seen in green and blue water at the same time. Rapid transitions take place in the Arctic Sea, from ultramarine to olive-green, from purity to opacity. The appearances are not delusive, but constant as to place and colour. The green is produced partly by its freshness, as well as by myriads of minute insects, which devour one another and are a prey of larger animals. The colour of clear, shallow water depends upon that of its bed. Over chalk or white sand it is apple-green, over yellow sand dark green, brown or black over dark ground, and grey over mud. MRS. SOMERVILLE.

AMMOPHILA SABULOSA.

TO the lover of natural history nothing can be more interesting than the study of insect life. The pine hills of Surrey, with their heath-grown commons and sunny, sandy slopes, have furnished me with many curious specimens; among others the Ammophila sabulosa, of the family Sphecidæ, order Hymenoptera. The females exhibit extraordinary instinct in discovering the proper receptacles for their eggs.

From the beginning of June till late in the summer this voracious insect continues her work of destruction upon the larvæ of the Lepidoptera; you may watch her through the whole proceeding, so entirely is she engrossed in her occupation. Lying on the heather, near an open, sandy space, on July 4, I observed the Ammophila seize upon her prey—a green caterpillar, three times the size of herself—fiercely stinging it several times. Once during the operation she alighted on my shoulder. In order to follow her movements more closely I rescued the grub and placed it upon my bright scarlet sunshade, but nothing daunted, the cruel Ammophila repeated her attacks without mercy, until her poor victim being partially paralysed, she prepared to carry it to the place of destination. Taking the larva by the head in her strong mandibles—especially fitted for the purpose—she dragged it along; now and then the caterpillar would catch despairingly at a blade of grass, clinging to it with the last segment of the body, as if anticipating the cruel designs of its enemy. I noticed that the Ammophila after repeated efforts to proceed, let go the head and detached the hook from the protecting stem, so persevering was she in her endeavours: though I repeatedly removed the caterpillar to a distance, she returned again and again with surprising determination, until, having conveyed it to a suitable spot, with wonderful rapidity she formed a cell in the sand, using her mandibles to bring out particles of earth, and throwing the sand in a shower to about eight inches distant. Whilst burrowing she made a loud, buzzing noise, never ceasing in her work.

The cell being prepared, she descended into it backwards dragging her prey after her, and I believe it is at this moment, the larva being placed at the bottom of the burrow, that the insect chooses to deposit her egg. Previous to the interment I had carefully examined the caterpillar, and found only sting wounds.

Now the Ammophila proceeds with the same hurried movements to fill up the cavity and close the mouth of the burrow, smoothing the sand at the surface until no trace of the entrance can be detected. No sooner is her work completed than she commences her researches for another victim, running quickly

along the sand, her wings in continual vibration, flying for a short distance, then settling again.

After waiting some time, I disinterred the caterpillar, and in the most fleshy part I discovered a single oval-shaped egg of a creamish colour. This leads me to believe the Ammophila deposits one egg only in each grub. When the egg hatches the larva feeds upon the caterpillar, and after undergoing its transformation, works its way out of the burrow.

On another occasion I observed the Ammophila capture a small whitish caterpillar: this was much later in the season (August 18), when probably there was a scarcity of the green species. The grub being small, the Ammophila clutched it in her mandibles, and flew to the distant place of interment, which had evidently been previously determined. Leaving the caterpillar near, she very soon effected an opening, but in the work of burrowing she completely covered the larva with sand, so that when the cell was prepared she searched in vain for her prey and impatiently flew away. I conclude from this she cannot be guided by scent. I now removed the particles of sand, exposing the grub to view, and watched.

The second lunch bell sounded, but I was not to be interrupted in my interesting observations; scientific researches taking precedence of all minor necessities. I waited; and in about ten minutes the Ammophila returned. Instantly detecting her prey, she seized it and dragged it backwards into the cell. I placed a glass tumbler over the opening, so that when the insect came forth—having, as I presume, deposited her egg—she found herself a prisoner, and whizzed furiously round for a few seconds, then lay with her long body flat upon the sand in serious reflection; for this was surely a new experience! However, she was not long in her deliberations. Forgetting her captivity in her anxiety to secrete her victim, she commenced filling up the hole, scarifying the earth at the surface, sending up a little shower of sand which struck against the sides of the glass and fell upon her wings, causing her considerable consternation.

I now secured the Ammophila and began a careful search for the grub. At a depth of about six inches I found it, together with another larva of the same family. Both caterpillars were still quite fresh. These observations prove that the Ammophila is in the habit of provisioning the same cell with more than one larva, which is in contradiction to Westwood's theory. I have preserved the Ammophila and her prey in spirits of wine.

THE INFLUENCE OF MATERNAL IMPRESSIONS ON THE OFFSPRING. A QUERY.

I HAVE long thought that the readers of NATURE NOTES and their friends could well render a solid service to science by devoting their attention to a point which has been hitherto overlooked by writers on Evolution; or, at any rate, has by no means received the recognition which, I believe, its importance in relation to that theory reasonably demands.

The influence of maternal impressions, chiefly visual, upon the physical and other characteristics of the offspring has, so far as I am aware, received scant attention from the disciples of Darwin. Yet I venture to conjecture that it exercises enormous force, and that, carefully observed in detail by numerous intelligent observers, it will be found one of the most important factors in Natural Selection. I can here only sketch what I mean in outline, leaving others to fill in the extensive blank.

It is fashionable nowadays to scout the more extraordinary and exceptional manifestations of the principle. On the other hand, one cannot help noticing as remarkable a popular belief in its efficacy current at a relatively early age of the world. I refer to Jacob's experiments on Laban's cattle, recorded in Genesis xxx. 37 *et seq.*

We have to consider the question here from two aspects: (*a*) the extraordinary and exceptional, as affecting monstrosities; (*b*) the comparatively trivial, common, and routine manifestations. It is the latter on which I would comment, as most concerning the readers of NATURE NOTES. Moreover, these are, in the end, of enormously greater significance than the striking and often startling cases which come under the former heading, and which, also, mostly concern the human species—a subject, probably, beyond the scope of these pages.

Therefore, the first category may be dismissed with a few brief remarks. Some years since the "elephant man" was kept secluded at a London hospital. His mother had been (at least, so it was stated) frightened before his birth by an elephant in a circus. It was impossible to allow him out by day, in consequence of the most ghastly deformity that the mind can conceive: huge, misshapen arms and legs, a prominent snout, &c. He is happily now dead.

I myself knew a sturdy young lady who was bitten by a little dog about four months after marriage. A very fine, healthy little boy, with a withered arm, was the result. In another instance I noticed a round, pale yellow area upon a child's head. The mother explained that, under certain circumstances, she went into a room with the table laid out for a dinner-party. Among the rest was a dish of apricots. She had an inordinate craving for this fruit. They offered her everything

nearly upon the table but the apricots, which, therefore, she could not taste. In due time the infant was born with the above mark, which certainly showed a striking resemblance to the supposed source. These stories are commonly laughed to scorn by scientists ; yet I notice that, if anyone starts the subject in professional journals, there is immediately a perfect flood of similar cases, founded, for the most part, on personal observation by sceptical doctors.

Then, for the ordinary environment, involving no element of surprise or shock. I have been told a story of a lady who particularly admired a rather handsome Royal Duke. Under certain circumstances, she had the portrait of the august personage in all her rooms, and constantly thought about him. The offspring bore, it is said, a quite remarkable likeness to the object of its mother's Platonic devotion. Whether this tale is authentic or not, it is surely extremely probable that the ordinary resemblance of child to father does not depend solely upon inherited characteristics, but is, to a considerable degree, influenced by maternal sight and thought.

Now the question I would suggest for observation is simply this. Is the colouration, &c., of birds, of the lower mammals, even of fishes, affected by the natural environment of the mother, particularly so far as that concerns her visual sense ? And if so, to what extent ?

For example, how far may the colour of a grouse be ascribed to the prevailing tints of the heather amid which the bird lives ? Are not the stripes of the tiger, lately accounted for so humorously by Rudyard Kipling, in part due to the vision ever present to the maternal eye of tree-trunks, with the sun glinting through them ? The white plumage of the ptarmigan and snow bunting, the tawny yellow of the lion, the sandy-coloured snakes of the Egyptian desert, the sand-grouse, the dead-leaf-coloured woodcock—one need not multiply such instances hitherto ascribed to the survival of the fittest in the struggle for existence, and to that alone.

When I was a boy I fished in two rivers draining valleys about two miles apart. One had a bottom of grey sand, the other of stones, large and small, mostly coated with yellowish green weed. The eels from the former showed a pale white ventral surface ; those from the latter a rich yellow, or whitish-yellow.

Recently, in the New Forest, I saw a viper basking in the sun at the bottom of a ditch ; and on the day following caught a glimpse of another vanishing into a heap of dead leaves. The former exhibited the well-known vivid colouration : the latter, with the same zig-zag mark on the back, was absolutely indistinguishable in ground tint from the leaves. I am aware that the small red viper is now described as a distinct species ; but that hardly affects my point.

I submit that those readers of this journal who are not

prisoned, as I am, among the bricks and mortar, but can at pleasure watch Nature and her ways, would do yeoman's service by collecting as many like instances as they can in the light of my suggestion. At present that view is not admitted by scientists. All the same, I believe we should thus "pick up another pebble on the sea-shore" by no means without value.

HERBERT SNOW.

THE GARDEN OF MY YOUTH.

I HAVE pleasant memories of that old-time garden of my youth: it was surrounded by a well-built brick wall, in place of the jerry-built apologies which are nowadays springing up like mushrooms in August after a sharp shower of rain. Was it not in this very garden that I—now a fully fledged member of the British Ornithologists' Union—first made my acquaintance with our feathered friends? Surely, if memory serves me correctly, it was here that I first took an intelligent interest in the speckled-breasted thrush and the golden-daggered blackbird. Here it was—in the garden of my youth—that I first became acquainted with the little blue tit which had become entangled in the nets placed over the raspberries and currants to protect them from the fruit-loving birds, but not the tits, for they, above all others, are of great service to the fruit grower in the destruction of hurtful insects and their larvæ. In those days, I remember, we released the little feathered jewels, for grandpère was a careful and zealous student of natural history, and the birds were as much to him as they were to dear old Gilbert White, of Selborne, or as circumventing the wily trout was to our brother of the angle—Izaak Walton.

How well I remember, as if it was only yesterday, setting that brick trap to catch the sparrows, and how, more often than not, the robin was found inside as I nervously uplifted the fallen brick, and how my conscience pricked me until he of the red breast was at once given his liberty.

It was not my intention, I can assure you, to catch a robin: I had too much faith in the superstitions and beliefs about the bird—so far as they were *supposed* to concern my own personal safety—to wish to trap them. Somehow, however, that trap—made with four bricks, a peg purloined from the wash-basket and a catapult-shaped stick from off a neighbouring currant-bush—seemed destined to fall either without a catch (although the bait in this case was always gone), or with a lustrous-eyed robin crouched in the corner ready to make a bold dash for liberty at the uplifting of the brick.

Sparrows, however, did occasionally fall a prey to my cun-

ning, and a few great tits—veritable demons for getting in a bird-trap, seeming to delight in being caught one minute, then released, only to be caught again the next—but beyond these, I am at this time of day pleased to relate, my prisoners were few indeed.

I never intentionally killed a bird in my life; I have never fired a gun at one: thus my fellow Selbornians and bird protectionists will, I trust, overlook my accidental misdeeds in those younger days, when that fatal brick happened to bring death to the feathered intruder.

It was from the precincts of this garden of my youth that I first watched the fairy flight of the swift-winged swallow and the white-breasted martin, where I used to observe the rooks passing morning and evening, or the chattering starlings scrambling for tit-bits on the rubbish heap. Here, too, I used to listen to the warble of the hedge-sparrow and the choice lyrics of king thrush, and their sweet cadences made a great impression on my young mind; and it was here in this garden of my youth that I first heard the hoot of the owl and watched its silent and graceful flight at the gloaming hour.

How I was interested in the mouse-like attitude of the little brown wren, the sprightly gait of the pied wagtail and the bright plumed chaffinch, or his more pugnacious relative the greenfinch. It was here, without a doubt, that the foundation of a love for natural history was laid in my young mind, and how thankful I am to that Nature-soul—now, alas, gone hence—who inculcated and fostered that love until he was no longer able to wander with me down the favourite lane or through the old loved copse, nor sit upon the cowslip-covered bank to listen and adore the woodland choir.

But it is not only of the birds that visited the garden that I have pleasant recollections. Was it not here that I first feasted my eyes one early spring day on a brimstone butterfly, and later in the season upon a delicately Nature-painted orange tip, a peacock, a large cabbage white, a red admiral, or one of the beautiful blues? Yes, it was here that my love for these, and all forms of wild life, and a sense of the beautiful, was first instituted, and how I long sometimes for a peep over the old wall, or better still, to be able to wander alone in the loved spots once more. How well I remember where the rustic bee-hives stood and those large filberts grew; I seem to see now those Cox's orange pippin apples and William pears, and rue the day that ever allowed me to part with such luscious fruit and sweet associations. I can see now that bower of fragrant white jessamine, and can almost catch the sweet aroma wafted on the breeze as I pass towards the masses of roses against the wall, the ground around strewn with their tresses. If my memory serves me, too, we had a yucca tree, or plant, or shrub—whatever its correct definition may be—which was the envy of all who saw it, especially when it unexpectedly burst into flower one happy day—a very rare occurrence I believe in this country.

Then I remember that lilac bush with its clumps of flowers, the golden chains of the laburnum, and the pearl-white flowers and delicate foliage of the acacia. Hard by the last-named was the fernery, and how well I remember scampering round the winding paths after a gale for any fallen pears from the tall pear tree overhead, in the topmost branches of which the sparrows always nested, and how I longed to climb the dizzy heights and peep inside that paraphernalia nest.

Those bunches of primroses in early spring, snowdrops and crocuses, scarlet and pink geraniums, and golden and brown calceolarias, many-hued pansies and antirrhinums, sweet-smelling wallflowers and pinks, auriculas and polyanthus, lilies of the valley and oxlips, bluebells and periwinkles, woodruff and daffodils, nutmeg and syringa, guelder rose and mountain ash, stonecrop and day lilies, lavender and clematis, mignonette and hops, violets and Canterbury bells, Solomon's seal and gorgeous passion flowers, stocks and phloxes, flowering currant and tulips, canary creeper and white rock cress, anemones and variegated grasses, lupins and dielytras, London pride and foxgloves, celandine and forget-me-nots, honeysuckle and larkspur, poppies and star of Bethlehem, pansy and wood sorrel, chrysanthemums and asters, fuchsias and Michaelmas daisies, sweet Williams, candytuft and nasturtiums, and other sweet and old loved flowers and trees flourished and were tended with loving hands in the garden of my youth, and I seem to see them now blossoming in all their pristine beauty.

Then in the fruit and vegetable garden many a happy day and favourite nook is brought before my view; those white heart cherries, about which the blackbirds and thrushes—and sometimes a rosy-breasted bullfinch—so often quarrelled; those clusters of black, red and white currants, and large red and yellow gooseberries, bright scarlet strawberries and tinted peaches, the cucumber frames, the dark damsons and the prize Victoria plums; the greenhouse with its store of treasures, chief among which were purple grapes and a grand collection of cactus plants. The herb bed, too, I call to mind and seem as if I can catch the sweet scent from the rue, the marjoram, the sage, the thyme, and other herbs, which are too little grown in our gardens of to-day. I see, too, that little border which constituted my very own garden; how anxiously I watched the growth of my plants; how often I forked them up to see if they were growing. How I used to plant cowslips with their roots uppermost in the belief that they would transform themselves into oxlips by such a procedure, and how disappointed I was when neither oxlip nor cowslip was the result! Those large cooking pears—the size of a cricket ball—and the cooking apples on the trained trees by the path sides; I see them now as they hung in days gone by, but have I not written sufficient already of the pleasant memories and happy associations of that dear old garden—the garden of my youth.

W. Percival Westall, M.B.O.U.

REVIEWS AND EXCHANGES.

The Natural History of Selborne. By Gilbert White. With Notes by Richard Kearton, F.Z.S., and 123 illustrations from photographs taken direct from nature by Cherry and Richard Kearton. Cassell and Co. Price 6s.

We have often expressed the opinion that if Gilbert White were alive to-day he would be a votary of the camera; and we suppose that Benjamin White, under

Gilbert White's Sundial.
From Mr. Kearton's edition of "The Natural History of Selborne.")

Lindens Planted by Gilbert White at Selborne.
(*From Mr. Kearton's edition of "The Natural History of Selborne."*)

BEECHES ON THE HANGER.
(*From Mr. Kearton's edition of "The Natural History of Selborne."*)

GILBERT WHITE'S GRAVE.
(*From Mr. Kearton's edition of "The Natural History of Selborne."*)

the same circumstances, would insist on publishing the "Natural History" on highly-glazed paper and illustrated with half-tone process-blocks. If this had been done, the result would have been very much what the brothers Kearton and Messrs. Cassell have given us; and, if we do not worry ourselves about the durability of the volume through long years to come, we must admit that this result is a most charming edition. Mr. Kearton's notes are not very voluminous, though perhaps the "R.K.s" make them over-conspicuous. Those on the birds are accurate, informing and generally valuable; but generic names should invariably have their initial letters in capitals; and, as the Romans chose to make the names of trees feminine, no botanist, ancient or modern, ever called the broad-leaved elm "*ulmus montanus*." As to the illustrations, we have nothing of which to complain. Selborne, like modern Bohemia, has no sea-coast, so that the group of puffins on p. 63 is, perhaps, out of place; but this is perhaps the only picture which could not have been taken within the area of Gilbert White's purview. Photographs may not be able to rival the work of pencil and brush from an artistic point of view; but some of us who love our Selborne—the place, not the book, or rather the place because of the book—will be very glad to add the accurate reproductions of its beauties by the camera to the many more or less idealised pictures which we already possess. With some of the Messrs. Kearton's admirable portraits of animals and plants we are already familiar from their previous books, though many of these are new. A large proportion, however, of the illustrations in the present work, of which, by the courtesy of the publishers, we are able to give four examples, are views in Selborne itself; and for these alone we would willingly pay the entire price of the volume.

A First Book of Forestry. By Filibert Roth. Ginn and Co. Price 3s. 6d.

The Government of the United States has for some years shown itself fully alive to the national importance of husbanding the forests of the country. It has organised a Forestry Bureau in its Department of Agriculture, and a Forestry Division, of which Mr. Filibert Roth is the chief, in its Department of the Interior. The officials of these departments have for years fulminated Cassandra-like warnings as to the inevitable results of reckless clearing, forest-fires and wasteful methods of work; and have, moreover, issued an invaluable series of practical reports and educational manuals on forest science. This little book, with less than 300 pages of large print, but with nearly 100 excellent illustrations, is designed as an introduction to forestry for public schools and country homes. It is wonderfully comprehensive, dealing with the conditions of forest growth, such as soils, moisture, temperature, and altitude; methods of management, such as coppicing, seed-raising, thinning, turpentine-collecting, cutting and timber-measurement, the botanical and physical properties of wood, and the methods of distinguishing the common trees of the United States. Everything is explained with the most practical detail, but in the simplest of language. It might have been well to have introduced the scientific names of the trees earlier than in the appendix; but this is the only improvement we can suggest.

A Biological Investigation of the Hudson Bay Region: North American Fauna, No. 22. By Edward A. Preble, U.S. Department of Agriculture.

This is a report issued by the United States Government of a purely scientific reconnaissance undertaken under the orders of that Government through a portion of Canadian territory, mainly with the view of comparing the animal life of the region with that of Alaska. The region explored is between the northern end of Lake Winnipeg and Hudson's Bay, the region of the Nelson and Churchill Rivers, a part of Keewatin. A full bibliography of previous work is given, a general description of the vegetation, and a full enumeration of the mammals, birds and batrachians of the region. Six new mammals are described but not figured, though fourteen plates of slight landscape interest are included. The whole of the scientific work is admirably done; but the Government printing-office have cruelly "stabbed" the pamphlet. We could have wished this had come from a Canadian source.

Report of the Massachussetts Audubon Society, 1897-1902.

Five years of good work is here recorded. We quote, as of general interest, the opening paragraphs of the Report:—

"Bird protection in its broadest sense appeals to many persons and diverse

interests, and its importance is becoming more generally appreciated. The sportsman who values birds chiefly for the pleasure derived from their pursuit as game, the market hunter who hunts them solely for profit, the farmer who regards them in the light of their relation to agriculture, and the many persons of every class who derive enjoyment from their presence, are all interested in the question of their preservation. . . . . Still bird destruction is going on rapidly in the United States, and in many regions there is a marked decrease in the abundance of certain species. Cheap guns, lax laws, the mania for collecting and shooting, and more especially the enormous demand for birds for the market and for the millinery trade, are responsible for this reduction in bird life. . . .

"The general term 'plume birds' is used to include not only the herons, which are killed for their nuptial plumes, but a number of water birds which are used for decorative purposes, such as pelicans, terns, gulls and grebes. The snowy heron furnishes the well-known aigrettes; pelicans supply quills and breasts; gulls and terns are worn in great numbers on hats; while grebes' breasts, besides being used for trimming hats, are also made into muffs, collarettes and capes. There is an enormous demand for plume birds by the millinery trade in years when they are in fashion, and the localities where the birds breed are scoured by hunters, who find a ready market for the skins at prices varying from ten to fifty cents apiece. As these birds all nest in colonies, it is a simple matter to destroy large numbers on the breeding grounds, and so thoroughly is the work done that some of the species, particularly the egrets and terns, have been almost exterminated along the southern and eastern coasts of the United States.

"The value of herons, terns and grebes is not generally appreciated, and even the services of the gulls as scavengers are recognised in comparatively few places. As a result birds of plume, being neither game, song nor 'insectivorous,' are not protected by ordinary game laws unless by chance they happen to be mentioned in the list of protected species. Thus, by a curious perversity of circumstances, the species which are killed most mercilessly and in the greatest numbers are the very ones which are accorded the least protection."

During the last five years there has been a steady growth in public sentiment in favour of bird protection.

The Audubon Calendar for 1903. Audubon Society, 234, Berkeley Street, Boston, U.S.A. Price 50 cents.

This is a re-issue of the same six large coloured plates of American birds as were used for the 1902 calendar. They were excellent and well worth the price; but we wish the Society would see its way to issuing a fresh series each year, so that in time its members might have a complete series of American bird-portraits.

The Butterflies and Moths of Europe. By W. F. Kirby. Parts 15 and 16. Cassell and Co. Price 7d. net each.

Reaching the thirtieth plate, we hesitate over each in succession as to whether it is not better than all its predecessors.

Received: *The Animal World* for November and December; *The Naturalist*, *The Naturalist's Journal*, *The Irish Naturalist*, *The Humanitarian*, *The Animals' Friend*, *Our Animal Friends*, and *The Agricultural Economist* for December.

NATURAL HISTORY NOTES AND QUERIES.

A Plea for the Mole.—A writer in the *Daily News* of December 6 says that "farmers owning much pasture land do not speak highly of the mole." That is quite true; there is a venerable and obstinate prejudice to be overcome, but facts are facts, and text-books and works of reference clearly prove that the mole is not a destructive animal.

M. Flourens states that the mole, if not exclusively, is essentially carnivorous, and probably the most voracious eater in the animal kingdom. He feeds on worms, snails, slugs, caterpillars, cockchafer grubs, and many other subterranean

and surface creatures. Mr. R. A. Sterndale, F.Z.S., in his work on the "Mammalia of India," says that moles are not trapped in India, and that their destruction in this country is carried on in a spirit of ignorance. Macgillivray, an observant naturalist, regarded the mole as a useful animal. I think it was Frank Buckland who called attention to the fact that wherever moles have been the grass grows afterwards very luxuriantly. Miss Ormerod and Sir Herbert Maxwell have also written to the same effect.

The Board of Agriculture publishes a leaflet on the habits and life history of the cockchafer, in which it is stated: "Moles and shrew mice feed upon them (cockchafers), and both of these animals should be protected."

Moles, instead of being the farmer's foes, are really his friends; and we may yet see laws passed to save him from extermination at the hands of his senseless persecutors. "Certain it is that in the present depressed condition of agriculture [to quote from an article in the *Nineteenth Century* by the Rev. Augustus Jessop] it is difficult to estimate how much serious mischief is being done by the extermination of one of the farmer's best and most influential friends—the mole."

53, *Chancery Lane, W.C.* JOSEPH COLLINSON.
December 9.

Squirrels in Scotland.—Last month a number of the *Scotsman* was sent me in which it is stated that a meeting of the Ross-shire Squirrel Club had lately been held in Dingwall "for the purpose of devising some means whereby united action could be taken among the owners of woods within the county for keeping down the spread of squirrels and lessening the destruction caused by the animals in the various woods and plantations."

The friend who sent me the paper remarked that nearly every tree in the county was ruined by squirrels.

Market Weston, Thetford. EDMUND THOS. DAUBENY.
December, 1902.

Long-tailed Field-Mice.—In one of my cucumber frames, filled with geranium cuttings, these mice are frequently found dead, with their eyes picked out, and gnawed about the head. It is impossible for any birds, such as tom tits, to enter the frame. What can be the cause of their mutilation and death?

Market Weston, Thetford. EDMUND THOS. DAUBENY.
December, 1902.

Polecats.—Some little time ago a question was asked in your pages about the occurrence of polecats. Two large ones, out of four seen, have lately been killed and sent to a local naturalist from the Ely marshes. As the damage caused by these animals to poultry in severe weather is spoken of, they must be far from uncommon in some of the fen lands of the Eastern counties, though none of the game preservers round here ever seem to come across them, as far as I can ascertain.

Market Weston, Thetford. EDMUND THOS. DAUBENY.
December, 1902.

Grouse.—A friend writes to me as follows about the curious behaviour of grouse, which perhaps some one can explain: "There was a drive going on, and the birds, instead of as usual flying low, came over like rocketing pheasants. There was an eagle flying over the moor all day, and that was given as a reason for the behaviour of the grouse, but it is totally contrary to my experience of hawks and game birds."

Market Weston, Thetford. EDMUND THOS. DAUBENY.

Robins.—I have very little belief in the idea that young robins kill the old ones, but think it is much nearer the truth that the old birds often persecute and kill the young. In my garden a robin in immature plumage was so tame as to hop on my knee and chase the flies on my back. Close by there was an old bird which used to attack and drive it in all directions.

Market Weston, Thetford. EDMUND THOS. DAUBENY.
December, 1902.

Ring-ouzels.—I noticed in your notes of the November number "Rare Visitors," by J. Hiam; I was glad to see this, for what Mr. Hiam tells us one can rely on, but the locality is not defined, that is, not to the public. For many years I have noticed a few (a very few) ring-ouzels in this neighbourhood, both spring and autumn, and have on several occasions been told by persons that they had seen a "blackbird" with a white ring round its neck, which means the same species. I have little doubt that the ring-ouzel passes through this locality twice annually on migration, nor is this to be wondered at, as one of its favourite breeding places is the Black Mountains. I have found many nests in the Llanthony Valley, and my eggs were collected on the Black Yat, a wild country in Radnorshire, not many miles north of the Black Mountains. Redditch is nearly in the centre of England, and as nearly as possible east of the locality where I find these birds breeding in the last half of May. I am of opinion that these birds move in an eastward direction in autumn and a westward in spring, that is, as far as the birds frequenting the centre of our island are concerned. The principal winter home of the ring-ouzel does not at present seem to be well known.

Redditch. DONALD MATHEWS.
November 29, 1902.

Black Woodpecker.—In NATURE NOTES for December, in my note on the black woodpecker, I notice there is a little mistake. It should not read "a beautiful black crest" but a "beautiful red crest." I expect in writing the description in a hurry, I put black instead of red.

Melford Bridge Road, Thetford. W. S. SPARROW.
December 11, 1902.

Devil's Coach-Horse.—Mr. Smallman's explanation that this beetle turns up its tail to "try and mimic a scorpion," is ingenious. Scorpions are nocturnal animals. A friend of mine, when in India, was much disturbed at night by a small owl which lived in a tree close to his house. At last he killed the owl, and on opening it was surprised to find that the contents of its stomach consisted entirely of scorpions. After this he left the owls alone. This leads one to think that trying to pass off as a scorpion would often prove a dangerous experiment.

Market Weston, Thetford. EDMUND THOS. DAUBENY.
December, 1902.

Earwigs.—I am quite willing to concede to Mr. Daubeny (see NATURE NOTES for December, p. 230), that the common earwig may be a useful insect in so far as it is carnivorous; but superstitions die hard, and I must protest against his revival of the exploded superstition, originated, I believe, by Kirby and Spence, and which I have had occasion to refute over and over again, that earwigs do *not* get into the ear occasionally. I need not here repeat what I have said before, further than to mention that an earwig once got into the ear of a member of my own family, and that Mr. F. Enoch tells me that they have sometimes dropped into his ears when beating trees in woods. I do not believe they do any harm in the ear other than by the irritation they may cause; and any insect that happens to get into the ear may easily be dislodged by dropping a little oil in, if it cannot be got rid of otherwise.

Natural History Museum, W. F. KIRBY.
South Kensington.

The Holly.—With reference to Capt. Daubeny's interesting note on the holly tree near his house in South Hants, I wish he would tell us the nature of the soil in which it flourishes. Christchurch, from the neighbourhood of which he writes, seems to be on the Bagshot sand formation, and I think sand must be the soil most congenial to the holly. In the *Leisure Hour* for January, 1894, page 201, will be found a copy of a letter addressed to *The Times* by Col. Lloyd Verney, giving some particulars of a remarkable holly close to his house at Llanidloes, Caermarthenshire, which he believed to be the largest in Great Britain, and which, according to the figures he gave, exceeded Captain Daubeny's specimen both in height and circumference of bole, and had been reported as

400 years old in 1836. The famous Holly Walk at Frensham, in Surrey, is on the Lower Greensand. Evelyn's holly hedge at Deptford, would, however, I presume, have been on the London clay, and Ablett, in his "English Trees and Tree Planting" (1880 edition), states that the holly will grow in almost any kind of soil, provided it be not too wet.

Dulwich, December, 1902. M. J. T.

[Our Vice-President, Professor F. E. Hulme, in his recently-published book on wild fruits, writes :—"At Claremont, in Surrey, is one that stands eighty feet high, and in the New Forest may be seen several with a girth of eight or nine feet. The timber becomes valuable when the tree is of any considerable size, and so the trees are felled."—ED. *N. N.*]

"Meteoric" Stones.—I thank you for your courtesy in inserting in NATURE NOTES, for December, my views on the supposed fall of so-called "Meteoric Stones" on the earth, and I also thank you for your comments.

You think that Sir Robert Ball could not have said that meteoric stones are of volcanic origin. I certainly understood him to say so at more than one of his lectures on the subject, that I have attended, and I certainly understood Mr. Fletcher to say to the members of the Selborne Society, that Sir Robert Ball had said that at a certain period in the earth's history these stones were shot out of volcanoes, and had since been revolving in space, but that he (Mr. Fletcher) differed in opinion from Sir Robert Ball, as he did not believe they could have had force enough to carry them through the atmosphere of the earth. Mr. Fletcher says, on page 40 of his book referred to by you, that if meteorites have been shot from volcanoes of any planet, Sir R. Ball is himself inclined to believe that the projection was from our own in bygone ages. If Sir R. Ball does not think that meteorites are of volcanic origin, how can he think that they may have been shot from volcanoes on the earth?

You also say these stones are found in districts far removed from volcanoes. But surely "many ages ago in the world's history," there may have been craters of volcanoes where they are now quite obliterated. The Irish stone was found in the county of Antrim, which is admittedly a volcanic district, comprising the "Giant's Causeway," which is always said to have been composed of volcanic lava. This volcanic district extends to Staffa and Iona in the West of Scotland, and from thence in a north-easterly direction through the great rift in Scotland, along which lies the Caledonian canal, which is undoubtedly a volcanic district. It is known that at the time of the great earthquake in Lisbon, some of the lakes in Scotland changed their level several feet, showing the great ramification of volcanic agencies beneath the earth's surface. Mr. Fletcher says, on page 34 of his book, that some Basaltic rocks in West Greenland contain nickeliferous iron, and we are told that Basaltic rocks were originally molten lava. This looks like a confirmation that meteoric stones which contain nickeliferous iron are of volcanic origin. Mr. Fletcher also says that "Dr. Johnston-Lavis has announced the find of an enclosure of metallic iron in a leucitic lava of Monte Somma." Does not this betoken the volcanic origin of metallic iron, or iron in a pure state? Sulphur, which is always of volcanic origin, I believe to exist in all meteoric stones previous to their explosion, at which time it has been expanded into gas by heat. They could not possibly explode unless some gas was formed in them.

I am obliged to you for referring me to Mr. Fletcher's book, "An Introduction to the Study of Meteorites," which you expected would convert me. I have purchased the book and studied it attentively. I cannot find in it any satisfactory proof that any one has seen an actual stone come from the sky. The card in the Kensington Natural History Museum, and the particulars of the discovery of the Crumlin stone, have been altered and added to since I read the particulars on November 15, but I can see no proof that anyone saw an actual stone falling down, at least, no proof that would be accepted in any Court of Law. All the newspapers mentioned that a sulphurous smell was observed, but it is not mentioned on the card. It is important, as showing that the stone contained sulphur and iron, which, if it became hot, would cause an explosion in the stone.

Can anyone tell upon what theory it is that meteoric stones, as it is said, explode and burst into fragments just at the very time that they get very near to the earth's surface, especially as they must be approaching it at very slight

velocity, considering the small distance they penetrate into it? and why do they explode at all?

If meteoric stones fall from the sky, what an extraordinary circumstance it is that they do not fall down upon human beings, or any cattle or animals, or upon any houses, or roads, or pavements. They are almost always found in fields, or gardens, or parks, &c., a very short distance under the surface.

Mr. Fletcher compares the path and velocity of "meteoric" stones with that of a cannon ball from a gun, but there is no analogy or comparison between the two. The gun is placed at an upward angle to the earth's surface, and the ball, as it proceeds, continues to make the angle with the earth's surface greater until it begins to fall, the ball having had to contend and struggle not only with the resistance of the air but also with the force of gravity, which has been retarding and stopping its speed. The meteorite, on the other hand, has been coming towards the earth. It has not been forced away from it, and has had the force of gravity entirely in its favour.

Mr. Fletcher says, "In the Hessle fall, several stones fell on the ice, which was only a few inches thick and rebounded, without either breaking the ice or being broken themselves." How could these stones have come from the sky, having as they had, such a slight velocity that they could neither break the ice nor themselves? How much more likely that they were ejected through the air, from a stone that exploded just beneath the earth's surface.

Mr. Fletcher, on page 25, says that luminous meteors have been mistaken for lightning, and their explosion for thunder; I believe that it is exactly the reverse.

Shooting Stars and Comets.—The hypothesis that the luminous meteors or "shooting stars" which we see within the atmosphere of our earth are solid bodies, I regard as a wild and absurd theory, without an atom of proof. These luminous meteors generally leave a trail of light behind them and then vanish into our air, showing that they are composed of luminous gas, which is gradually absorbed by the atmosphere.

I think that there is undoubted proof that meteors, or "shooting stars," are comets which have become divided up into a vast number of very small portions, which are always luminous, but invisible to us on account of their smallness, until they cross the earth's path and come near us through our atmosphere, and afterwards become eventually dissolved in our air.

That which rendered the supposition that a swarm of meteors is a comet broken up into small fragments, to be a fact quite beyond question, resulted from the following observations: The orbit of Biela's well known comet having been ascertained, and the time of its revolution round the sun found to be about six and a-half years, and the time of its crossing the earth's orbit ascertained, it was looked for in the year 1845, when it was found to have changed to two comets close together, the one being larger than the other. They both had tails. The smaller threw out a second tail. Then the larger showed two nuclei and two tails. Afterwards it showed three tails and three cometary fragments were visible round its nucleus. When a comet shows two or three tails it is quite evident that it is in the act of dividing itself into two or three comets. In 1852, only two comets were at that time visible, separated from one another by a great distance, the one being ahead of the other. The rest had probably got divided up until they were too small to be seen. What caused the one comet to travel faster than the other has not been explained. They were still going in the orbit of Biela's comet. Since that date they have never been seen, but in the meantime astronomers suspecting there was some connection between comets and shooting stars, on November 27, 1872, which was one of the times when these comets were due to appear, there appeared in their stead a dense shower of shooting stars, travelling in the same orbit that Biela's comet had done. They had not been seen until that comet had failed to perform his accustomed journey. Again, on November 27, 1885, another dense shower was observed coming from the same orbit.

Mr. Fletcher says in his book referred to, that "Stars of very small magnitude have been seen not only through the tail, but even through the nucleus of a comet, without any apparent alteration of position by refraction." This, I consider, is very strong evidence—indeed to my mind it is satisfactory proof—that a comet consists of transparent gas. The tendency of comets to divide into parts is also a

confirmation that they are of a gaseous nature, and cannot be solid bodies. A comet, I believe, is a body consisting of a phosphorescent or luminous transparent gas, the particles of which are attracted together into a convex-shaped mass like a lens, which is called the "nucleus." I believe that the nucleus is the whole of the comet. The tail, I have no doubt, is the rays of the sun, which have passed through the nucleus and are extended beyond in the shape of a fan, just like the rays of light that have passed through the lens of a bull's eye lantern. It is known that the tail is invariably turned exactly in an opposite direction from the sun. It is impossible to account for this circumstance unless the tail is the sun's rays that have passed through the comet. It may be observed that the extreme end of the tail, or rays, takes a slight sweep back from the direction of the orbit in which the comet is moving. This arises from the swiftness of the motion of the nucleus, which has moved onwards during the time that the rays of light require to travel from the nucleus to the end of the tail, so that at the moment that we look at the rays at the end of the tail the nucleus has moved forward from the place it occupied at the moment when those identical rays passed through it. All the intermediate portion of the rays has moved on proportionately, so as to form a perfect curve. I personally watched Donati's splendid comet night after night in the summer of the year 1858, and can vouch for having seen the bright star Arcturus shine through the centre of that comet's tail with undiminished lustre, showing that the tail has no substance at all.

If, as I have no doubt is the fact, a comet breaks up, sometimes into two or three comets, and sometimes into a swarm of meteors, or shooting stars, it may be asked how is it that we never see shooting stars with tails? We know that comets have divided into several parts, and that each part has had a tail, as witnessed in Biela's comet. The answer to this question is very simple. We only see shooting stars at night, and we only see them when they are so close to us that the rays of the sun, which is on the other side of the earth, cannot possibly reach them. If we could see them in the day time we should certainly see them with tails.

Hampstead. PETER HASTIE.
December 13, 1902.

SELBORNE SOCIETY NOTICES.

Council Meeting.—The usual monthly meeting of the Council will be held at 20, Hanover Square, W., on Wednesday, January 14, at 5.30 p.m.

New Members.—Thos. Scard Reddrop, Esq., Marlborough; Geo. Turvill, Esq., Alton; Mrs. Challinor, Colwall; P. Anderson Graham, Esq., Tavistock Street; Mrs. Brock, Hampstead; J. Male, Esq., Thornton Heath; E. Fletcher, Esq., Norbury; Douglas Anderson, Esq., Hampstead.

Donations and Subscriptions.—The Council beg to acknowledge the following Donation: Rev. A. R. Miles, 2s. 6d. Subscriptions over 5s.: Joseph Rawlins, Esq., 10s.; T. G. Timbrell, Esq., 10s.; Geo. Turvill, Esq., 10s.

NEWS FROM THE BRANCHES.

Croydon.—The monthly meeting of this Branch was held at the North Park Ladies' College, when Mr. N. F. Robarts, F.G.S., lectured on "The Geology of Croydon," the lecture being illustrated by lantern slides specially prepared by Mr. Abraham Flatters of Manchester. Mr. Robarts referred to the chalk as being the bed-rock beneath Croydon, whilst above it next in turn the Thanet Sands, Warwick Beds, Oldhaven Beds, London Clay, and the well-known beds of gravel which cover so much of the west and north of Croydon. Reference was made also to the fossil remains which have been discovered in each formation, and to the aboriginal races who left their flint axes and celts and other implements in the gravels, and in such places as the Waddam caves, which have been recently discovered. Scenic pictures of various sections in the neighbourhood were thrown upon the screen, serving to show the various types of scenery given rise

to by differences in weathering of the formations. A hearty vote of thanks was proposed to the lecturer by Mr. E. A. Martin, F.G.S., seconded by Miss H. C. Sturton.

SELBORNE SATURDAY AFTERNOONS.

On November 29 between thirty and forty Selbornians were conducted over the Charterhouse by the Master, Canon Haig Brown. In the old Jacobean Chapel, with its classical colonnade and its low gallery, within sight of the tomb of its founder, Thomas Sutton, the Canon delivered a delightful *résumé* of the history of the foundation. After alluding to the early Carthusian monastery of which this Chapel originally formed a part, its dissolution by Henry the Eighth, the gift of the property to Sir Edward North (whose hospitality to Queen Elizabeth for four days practically ruined him), the Canon described how the property was bestowed by that same Queen upon Lord Thomas Howard from whom it was purchased by Thomas Sutton. It is to the benevolence of Thomas Sutton that the country owes the foundation of the "Hospital" with its provision for eighty poor men, and the school for forty boys. But whether in the Chapel, in the Cloisters, with their tablets to the memory of old Carthusians, including Thackeray (and surely there should be one to Colonel Newcome also), in Norfolk House, part of which the Canon himself occupies, in the great Banqueting-room, with its wonderful old tapestries, the Canon's help was invaluable and his intimate knowledge of the place constantly in evidence. It was regretted at the time that no opportunity arose for thanking him formally for his very great kindness throughout the whole afternoon; but if not expressed publicly the sentiment was universally uttered in private.

Saturday, January 17, 1903.—**Natural History Museum, Cromwell Road, S.W. (Ornithological Department).** Meet Mrs. Percy Myles in the Central Hall, 2 to 2.15. Mr. Pycroft has kindly undertaken to give a "Talk about Birds" to the Selbornians.

Saturday, January 31.—**St. John's Church and Gate, Clerkenwell,** Meet at the door of the Church, 2 to 2.15. The Rector, the Rev. T. W. Wood, has kindly undertaken to act as guide. Nearest station, Farringdon Street, ½d. 'bus from Blackfriars and Ludgate Circus to same station.

ANSWERS TO CORRESPONDENTS.

H. J. Driscoll.—The gnats seem to be the common species *Culex pipiens*.

NOTICES TO CORRESPONDENTS.

1. All communications for NATURE NOTES must be authenticated with name and address, not necessarily for publication.

2. The return of an unaccepted contribution can only be guaranteed when it is accompanied by a stamped and addressed envelope. We cannot undertake to name specimens privately, to return them, or to reply to questions by letter.

3. All communications for any number must be in the Editor's hands by the 10th of the preceding month.

4. Communications for NATURE NOTES, books for review, specimens for naming, &c., should be addressed to the Editor, PROFESSOR BOULGER, F.L.S., F.G.S., 11, Onslow Road, Richmond, Surrey.

5. For the supply of the Magazine to others than members address the publishers, Messrs. JOHN BALE, SONS AND DANIELSSON, Ltd., 83-89, Great Titchfield Street, London, W.

6. Letters connected with the business of the Society, subscriptions, &c., should be addressed to the Secretary, Mr. R. MARSHMAN WATTSON, 20, Hanover Square, W.

Nature Notes:

The Selborne Society's Magazine.

No. 158. FEBRUARY, 1903. Vol. XIV.

OBJECTS OF THE SOCIETY.

To preserve from unnecessary destruction such wild birds, animals and plants as are harmless, beautiful, or rare. To discourage the wearing and use for ornament of birds and their plumage, except when the birds are killed for food or reared for their plumage. To protect places and objects of antiquarian interest or natural beauty from ill-treatment or destruction. To promote the study of natural history.

SELBORNIANA.

The Wakes.—It is announced that Gilbert White's home has been purchased by Mr. Andrew Pears.

The Field Club.—The attention of Members is directed to the notice on the penultimate page of the present issue of the meeting of the Field Club Committee on Wednesday, the 11th inst. The winter Selborne Saturday Afternoons have been so well attended that it is hoped a good number will show their continued interest in the cognate summer work by attending and proffering advice and assistance.

Assisted Emigration.—A complaint has been addressed to *The Standard* of the wholesale capture of robins, blackbirds and thrushes in Somersetshire, destined to be sold to residents in London suburbs who—it is alleged—turn them out in their gardens. We are inclined to doubt whether the complainant is accurately informed. The species in question are still fortunately abundant in and around London, in spite of the cats, without any extraneous additions to their numbers; and we

doubt, moreover, the existence of any such a widespread love of birds in a wild state as would lead to much of the somewhat altruistic action alleged. Caged thrushes, however, are still unfortunately common objects of the towns.

Parsley Fern.—Our attention has been called to an advertisement in *The Bazaar* of "large clumps of parsley fern" at 1s. per dozen or 6s. per cwt. As the advertisement dates from Grasmere the "clumps" it refers to are probably wild ones, and, though this beautiful species is as yet abundant thereabouts, if it is to be uprooted in the wholesale fashion suggested by the prices quoted it cannot long remain so. It is moreover so difficult of cultivation—requiring, in fact, a constant flow of water about its roots—that few of the receivers of these beauties stolen from the mountain side will derive any permanent pleasure from the vandalism which their encouragement alone causes to be perpetrated.

A New Forest Natural History Society.—We note with pleasure the formation at Brockenhurst, under the presidency of a Selbornian, the Hon. John Scott Montagu, M.P., of a society for "the banding together of those taking an interest in Natural Science residing within or near the borders of the New Forest." Among its rules appears the salutary provision that "rare plants should not be removed from their localities in such quantities as to endanger their extinction. The practice of exterminating rare birds, fishes, insects, &c., is discouraged, and the influence of members is requested for their protection. Observations and records of the habits, migratory and breeding seasons, &c., of birds, are recommended in preference to the taking of the birds or their eggs." "Discouraged" is a mild term to apply to "the practice of extermination," and we doubt if many collectors, when capturing all the few specimens of a rarity they happen upon, often realise that they may be in fact exterminating it. We would take exception to the application of the adjective "migratory" to a season and to the relegation of mammals, such as the squirrel, to the obscurity of an "&c." More serious, however, is the statement in the printed letter inviting new members to join the Society, that "it will be one of its aims to furnish visitors and correspondents with information relative to localities and times of appearance of rare plants and insects, and thus make it a rendezvous for those who might otherwise lose valuable time." This looks painfully like a Society for the speedy extermination of rarities, and we are strongly of opinion that any associated body of students of Nature in England to-day would do far better to insist on the infinite range of study open to their members which has nothing whatever to do with rarities or their collection.

South-Eastern Union: Temporary Museum.—We have been asked to invite suitable contributions for the temporary Museum at Dover on the occasion of this year's Congress of the South-Eastern Union of Scientific Societies on June 11 to 13. Those who can contribute should communicate with the Hon. Secretary, Dr. George Abbott, 33, Upper Grosvenor Road, Tunbridge Wells, before March 1, and all exhibits should reach Dover by June 10.

Sowerby's "English Botany" Supplement.—The copy of this work in the Library of the Royal Botanic Gardens, Kew, is incomplete, wanting plates 2912 to 2960, with letterpress and Index, also plates, with letterpress, 2964, 2977, 2978, 2983, 2987, 2988 to 2999. The Director appeals to the public to assist him in completing this classical work on British botany, either by presentation or sale.

AN AUTUMN MORNING IN RICHMOND PARK.

THE clock of the Jesuit College hard by tolls out the hour of six o'clock as I pass through Roehampton Gate to spend a couple of hours amongst the fauna of Richmond Park, and at this early hour, beyond a few cyclist-workmen wheeling along to their daily labours, there is scarcely a human being to be seen on any part of this grand stretch of woodland and turf and bracken. For a few minutes I stop on the little bridge that carries the Richmond road over the Beverley brook, to watch a water-vole sitting under the bank of the muddy stream breakfasting upon the succulent parts of some kind of water plant. Most interesting is it to watch the beaver-like little rodent squatting up on his haunches nibbling away at the green stuff which he holds very daintily between his fore paws.

Suddenly the vole makes a dart into a clump of rushes and for a moment I imagine that I am the cause of his abrupt disappearance, but the distorted shadow of a bird on the surface of the brook causes me to look upwards, and I see a kestrel hovering with fanning wings over the spot upon which but a moment before the vole sat enjoying his bulrush salad, and I know now that the wind-hover and not myself is answerable for his sudden departure.

At no great distance from the bridge a mixed herd of both red and fallow deer are browsing upon the short sweet grass under the wide-spreading branches of a fine old pollard oak, and two stags carrying ten and twelve points to their antlers respectively are engaged in a friendly bout of arms a little apart from the hinds and prickets, practising no doubt for the more serious battles of the rutting season now so near at hand. The heavy haunches and swelling necks of the stags proclaim that

they are quite prepared for both fighting and courtship, and in a very few days the silence now reigning over the grand old Royal Park will be broken by the angry roaring challenges of the stags, and the loud clashing of their antlers in combat.

Indeed, even now a loud bellowing sound very like the roaring of a bull comes to my ears, and at the sound my thoughts fly westward to the tors and valleys of Exmoor, the home of the wild red deer. It was the challenge of a stag I just heard. Ah, there he stands in solitary grandeur, half hidden by the bracken under the big beech tree yonder, now lifting his splendidly antlered head to roar out his hoarse challenge of defiance, now angrily tearing up and tossing the bracken high in the air. This stag has become wild and restless, and will not allow me to approach sufficiently near to count the number of points he carries, and unfortunately I have no glasses with me, but as far as I am able to judge, he boasts as fine a pair of antlers as I have seen for many a long day, and oh that I were gifted with the touch of the painter to depict this splendid creature as he stands broadside on to me amongst the high bracken and the giant timber trees.

As I struggle through the dense fern covert on my way to one of the enclosed preserves lying just above Pen ponds, a covey of fourteen strong partridges get up with a loud "whurr" within twenty yards of me. Instinctively I raise my walking stick and exclaim: "A pretty right and left," for I feel certain that a brace of the little brown birds would have been accounted for had I but carried my favourite old "12 bore" instead of an ash-plant.

Surely that strong covey should augur well for the head of partridges in Richmond Park this season in spite of the unsatisfactory reports from many parts of the kingdom. Indeed, one of the keepers of Wimbledon Common, which almost adjoins Richmond Park, informed me a few weeks ago that this would prove almost a record year with him and his *confrères*, not only as regards partridges, but for pheasants, hares and rabbits also.

Hundreds, nay thousands, of rabbits, many of them only half grown, are sitting outside the covert, with here and there a perfectly black specimen, appearing strangely conspicuous amongst his grey brethren. Pressing the back of my hand against my lips I imitate the shrieking sound a rabbit makes when snared, or caught by a stoat or weasel, and now begins such a stampede of "cotton-tails" from every patch of bracken and tuft of grass, that for a few seconds the very ground seems to be alive with them; but the rush is soon over and not a rabbit is there to be seen anywhere round this particular covert, for they have disappeared into their burrows, or into the safe harbourage afforded them in the dense undercovert.

"Hicko, hicko, hicko," shrieks out a green woodpecker at me, as I pass under a fine old elm, amongst the topmost and decaying branches of which he has been feasting upon beetles,

fat Scolytus grubs, and other larvæ, for this giant elm is one of his many larders.

Still uttering his mocking laugh-like cry the brilliantly plumaged bird speeds away with strangely uneven but graceful flight to some other and quieter larder a little farther afield.

At length I arrive at the smaller of the Pen ponds which lies at no great distance from White Lodge, the birth-place of the Princess of Wales, and of her eldest son, our future king. A small colony of grey coots have taken possession of one end of the pond and hold it jealously against the incursions of the other fowl inhabiting the water, which include a little gaggle of Canadian geese, a paddling of about a dozen mallard, and dotted here and there an odd couple of pochard, a solitary shoveller duck, and a few moorhens. Suddenly that whistling sound so dear to the wildfowler, and caused by the pinions of fowl cutting their way through the air, comes to my ears, and looking upwards I discover a bunch of thirteen mallard passing over my head at a great height. The mallard appear as though they would drop, but, probably owing to my presence, after wheeling round the water they continue on their flight towards Kingston and are soon lost to sight behind the tall trees of Isabella plantation.

As I sit smoking the pipe of contentment on the bank, one of those interesting little frequenters of our lakes, rivers, brooks, and ponds, the lesser grebe or dabchick, suddenly appears on the scene, and within a dozen yards of where I am sitting, from heaven only knows where, for there is not sufficient aquatic growth on this part of the bank to hide a mouse. The dabchick has ever been a great favourite of mine and many a pleasant hour have I spent in watching and studying his habits, not only in his British haunts, but also in many different parts of the world, for the dabchick is to be found all over the globe.

It has never, however, been my pleasure before this morning to watch the movements of this wonderful diver under the water, but so clear is this pond that I am able to follow every movement of my little feathered friend.

Suddenly without causing a splash, or indeed scarcely a ripple, he disappears below the surface, heading for a growth of weeds wherein doubtless harbour the tiny fish and animalculæ that form the staple food of the dabchick. The bird when swimming under water bears very much the appearance of a large water rat. Ah, out of the weeds he comes with a long piece of American weed hanging round his neck, and up to the surface he bobs like an animated pike float, and the next moment he is making for the water plants and breakfast again. Time flies, however, and reluctantly I leave my resting-place on the bank and make my way towards the big pond which to my disappointment I discover almost deserted. Indeed, beyond a few old bald coots and a moorhen or two, there is not a sign of feathered life to be seen on this fine sheet of water upon which I have so often seen a goodly company of fowl assembled.

As probably many of the readers of NATURE NOTES are aware an iron fence, or rather railing, has recently been erected right across the head of the pond, and looking along those railings to my unspeakable pleasure I see a kingfisher perched at about eighty yards distance from me. Evidently there is a scarcity of fry at this end of the pond, and he flies away to the tiny island situate near the middle of the pond.

Now with his glorious iridescent plumage glinting under the rays of the bright early morning sun, the beautiful little creature hovers hawk-like some twenty feet over the pond, now like a flash of blue lightning he "stoops," and for a moment of time the rippleless surface of the water is broken by the downward plumage of the bird. Another flash of blue through the air, this time in an upward direction, for the kingfisher has flown into one of the willows growing on the island to devour his scaly capture. I would gladly spend a long hour watching this charming feathered fish-poacher's habits, but the time at my disposal is limited, and I have yet a good portion of the Park to explore ere I reach Robin Hood gate.

From a clump of dry rushes growing on the banks of a little stream of water which feeds the big ponds, and in which a quantity of delicious watercresses of the real brown variety flourish, I flush a young hen pheasant whose tail feathers are just beginning to appear, and with a great to do she goes rocketting over the young trees, of what I have been told was, in years gone by, a duck decoy; but to-day not a trace of a decoy is there to be seen, and I am bound to confess that personally I hae me doots as to whether *that* 'coy ever existed, and as far as I have been able to discover, no mention of it is made in the County history.

Leaving Pen ponds I make my way to the plantation where for years past a small colony of herons have nested, but not a sign of the interesting and beautiful birds is there to be seen this morning, and so I wade through acres and acres of glorious feathery bracken flushing three good coveys of partridges and setting afoot a hare and many a rabbit from their forms in the dense fern-covert.

At length I come to Robin Hood gate, and having breakfasted at the comfortable little hostelry, which like the gate is named after that celebrated sporting outlaw of the olden times, Robin Hood, I walk through the peaceful hamlet of Kingston Vale, across Putney Heath, and down the steep hill to Putney town, where I jump into a well found and comfortable motor omnibus which lands me in Piccadilly Circus just as "Big Ben" is booming out the hour of ten o'clock.

J. M. B. DURHAM.

SEA-WATER.

"Behold the sea,
The opaline, the plentiful and strong,
Yet beautiful as is the rose in June,
Fresh as the trickling rainbow of July;
Sea full of food, the nourisher of kinds,
Purger of earth, and medicine of men;
Creating a sweet climate by my breath,
Washing out harms and griefs from memory,
And, in my mathematic ebb and flow,
Giving a hint of that which changes not."—*Emerson.*

WHO that has ever taken a dip in the sea is not aware that its water is distinctly salt in taste and more buoyant than fresh water? These two characteristics are intimately connected. Let us examine them a little more closely. If we fill a good-sized bottle first with pure water and afterwards with sea-water and weigh it carefully on each occasion, we shall find that it is heavier when filled with salt water. Quantitatively accurate experiments will inform us that if a given measure of pure water weigh 1,000 lbs. the same measure of sea-water will weigh from 1,024 to 1,027 lbs., according to the nearness of large rivers, melting ice or hot winds. River water, it is true, is by no means pure. Thames water, in fact, contains about 21 grains of saline matter per gallon; but this is not perceptible to the taste, and sea-water contains more than a hundred times as much, from $3\frac{1}{2}$ to 4 per cent., that is, of its entire weight. In consequence of this greater density of sea-water, not only is it easier for us to float or swim in the sea than in a river, but heavy rain falling on a calm sea, or the water carried down by a swift river, will float for a time on the surface and may even be bailed off it.

If we compare the taste of sea-water to that of ordinary salt and water, we shall detect that the former is not only salt but bitter, and we may also notice a certain flatness or alkalinity, reminding us of the taste of carbonate of soda in water. A little sea-water boiled down till a considerable proportion has passed off as steam will taste decidedly more salt and more bitter; and a very pretty, though simple, experiment is to take a drop or two of this concentrated sea-water, having first stirred it well so as to mix its constituents completely, and finish its evaporation under the microscope. In a warm room the water will soon evaporate; but the salts it contains will not do so. As we watch the vanishing water, numbers of beautiful symmetrical crystals will be seen to shoot into being. The first to appear will be oblong, pointed at one end, and barbed like an arrow at the other. These are precise miniatures of those limpidly transparent arrowheads of selenite that occur near the surface of the clay of Oxford or of Sheppey. They are gypsum or hydrous calcium-sulphate, and, though by no means the most abundant of the salts present in the water, they appear

first because this substance is less soluble than the rest. Next, crowding round the margin of what was the water, come numbers of tiny cubes, some of which we may make out as having their faces hollowed out in a series of step-like squares, such as are often seen on a larger scale in the salt-pans of Cheshire. These cubes are mainly the common salt or sodium-chloride, by far the most abundant of all the substances dissolved in sea-water, appearing last in the evaporation because it is the most soluble. Common salt constitutes in fact more than three-quarters of the whole amount of salts present. The bitterness of the water is due to magnesium compounds, which rank next in abundance to the common salt, and are mostly in cubical crystals not readily distinguishable from those of that substance. The flatness or alkalinity is produced by calcium-carbonate, familiar to us on a large scale as Iceland-spar or as marble, but occurring in sea-water in remarkably small proportions. As each salt has its own definite crystalline form, could we accurately sort out the tiny crystals resulting from our experiment, we might judge of the proportion in which each is present.

More precise methods teach us that, while a gallon of sea-water weighs about 70,000 grains, more than 67,600 of these are represented by pure water; and, of the 2,393 grains of saline matter, 1,964 are common salt, 256 magnesium-chloride, 98 calcium-sulphate, 53 potassium-chloride, 16 magnesium-sulphate, rather more than 2 calcium-carbonate and 2 magnesium-bromide.

As to the source of these salts which we find in sea-water, it is now generally believed that the ocean has been salt from its beginning. On what is known as the Nebular Hypothesis of the early history of our globe, all the waters existed at first as vapour in the hot primeval atmosphere, and, in being precipitated as heated rain, would carry down with them many more or less volatile saline substances in solution. But even if this were not the case, and the ocean was at first fresh, it would now be salt and is probably constantly becoming more so. Pure water is ever being drawn up from the sea as vapour into the atmosphere by the sun's heat, the salts being left behind as they were on the slide of our microscope; so that the ocean has been compared to a vast retort of which the sun is the furnace and in which the saline solution is being gradually concentrated. This evaporated water condenses in the upper air to fall as rain, soaks into the earth to feed the springs, and rises into the rivers, constantly in its passage through and over the rocks leaching out any soluble matter with which it comes in contact and carrying it down to the ocean, where these salts will accumulate while the water is again evaporated to repeat its task.

Since every chemical element seems capable under some circumstances of being held in solution in water, traces of most elements have been detected in sea-water. Many of the plants and animals that inhabit the ocean require calcium-carbonate or silica to build up their skeletons. It has been suggested that

the comparatively abundant calcium-sulphate may serve as the source of the supply of lime to the myriads of our corals, sea-urchins, star-fishes, crustaceans, and shell-fish; but the very minute traces of silica present in sea-water is somewhat puzzling.

In addition to its dissolved salts sea-water always contains the gases of the air, though in varying proportions. As we see the surface water driven before the wind and thrown up into waves, we see it mingled with the air, a bubbling mass of foam or detached flakes of spray, and some of this thus imprisoned air is dissolved in the water and renders possible the respiration of the organisms that live in it.

Nor is this "purger of earth," as Emerson calls it, only the means of supplying air to its inhabitants: it is, as he says, "full of food." The proportion may seem infinitesimal, so that Wyville Thomson's "dilute pea-soup" seems a gross exaggeration; but there can be little doubt that the diffused particles of the dead bodies of plants and animals which exist throughout the sea, whether those of marine organisms or carried down by rivers, are of supreme importance as food for the simpler forms of marine creatures, which in their turn serve as food for larger or higher types.

A TIGER CUB THAT ATE ITS OWN MOTHER.

I HAD shot a tigress the evening before. At least, I thought I had, because although it was too late and not safe to follow her up when she went off badly hit, I heard her making a nasty noise just as if she was very sick. I had also seen the cub of this tigress, but was not able to get a shot at it. The next morning we were on the spot, searching about, and found no tiger nor any trace of blood. My men were beginning to get weary and sceptical about the beast being hit, but I determined to persevere. Close by there was a deep ravine or "nullah," with a small rivulet running in it. Into this ravine I descended on foot, armed with my double-barrelled 500 Express Rifle, and my shikari followed me, armed with a heavy double-barrelled pistol, and a long spear. After following the course of the rivulet a short distance, there was a nasty smell, and I saw my shikari hanging back, so I signalled to him to stand still, and went on alone until I came across a big trunk of a tree which was lying right across the rivulet, and which quite prevented my seeing what was immediately beyond it. Stalking quietly up towards this trunk, I reached it and looked over. There lay the tigress half in and half out of the water, quite dead and with part of its body eaten. The surrounding moist earth was covered with the footmarks

(pugs) of the tigress' cub, and bore no other animal's marks Moreover, the manner in which a tiger begins to feed on a carcase, is by commencing at the bowels, as had been done in this case, and all this together was proof positive that the cub had been feeding off its mother. The skin would have been a beautiful one had it not been spoilt by the cub. This tigress' head was such a picture that I sent it to England to be mounted, and I have it still. If my leave had not been over, I would have very likely been able to shoot the cub also, as it was prowling about, doubtless hoping for another feast.

Montreux, Dec. 1, 1902. A. YALDWYN, Lt.-Col., D.S.O.

REVIEWS AND EXCHANGES.

The Marylebone Centre Magazine, Vol. i., No. 1. Sold at the Centre, Burghley Road, Highgate. Price 6d.

In spite of a committee of twenty-one editors, our new contemporary makes a very creditable appearance and seems quite what the magazine of a pupil-teachers' centre should be. We are glad to see that a Rambling Club has been started for the study of geography, but are at a loss to know why it should be confined to the junior probationers. No better beginning could have been made than the "Wealden Walk," well described in this number by Emily Denn, as no route near London is more instructive than that from Caterham to Tilburstow. Some slight and natural mistakes occur, such as calling an observatory and a castellated summer-house a water-tower and a fort, and the threadbare mis-statement that the Pilgrims' Way leads from Winchester to Canterbury; but the important point that the learners should be taught to see for themselves has not been overlooked.

My Dog Frizzle and Others. By Lady Alicia Blackwood. Operative Jewish Converts' Institution. Price 4d.

This is one of those excellently-intentioned stories for children that some children who are too young to be able to read them may appreciate. The authoress' allusions to "our curate" are charmingly *naïve*.

Nature-Knowledge: its Progress and Interpretation: Opinion and Experience from the Nature-Study Exhibition. By Wilfred Mark Webb. Reprinted from The Record of Technical and Secondary Education for October, 1902.

Pending the appearance of the official report of the Nature-Study Exhibition, this is a most valuable, comprehensive and concise discussion of the results so far reached in the movement in favour of what some consider a new departure in education. It is brimful of suggestions for teachers, whilst the illustration of the Stepney Borough Museum exhibit of the oak is an object-lesson to museum-curators. We do not, however, sympathise with Mr. Webb's endeavour to make "nature-lore" mean outdoor, and "nature-knowledge" indoor, work.

Hillside, Rock and Dale. By Oliver G. Pike. Hutchinson and Co. Price 6s.

This is essentially a sequel to *Woodland, Field and Shore*, and *In Birdland with Field-glass and Camera.* Mr. Pike has improved in technical skill and has certainly done much to justify his advocacy of the electric release in bird photography, though his explicit statements as to the makers and cost of the instruments he recommends, savour rather too strongly of advertisement for a work claiming a

scientific or literary position. Excellent, moreover, as are many of his illustrations, their value would, we think, have been enhanced by a reduction in their number. Nothing is gained, for instance, by the four views of the kite's nest on pp. 61, 63, 64 and 65, or by the five portraits of the coal-tit on pp. 74, 76, 77, 81 and 90: we are beginning to doubt whether photographs of nests and eggs,

CORMORANTS. (FROM "HILLSIDE, ROCK AND DALE." BY OLIVER G. PIKE.)

leaving little room for surroundings and without any scale for comparison, such as the heron's nest on p. 51, have much instructive value; nor, though possibly publishers may have grounds for their liking for coloured frontispieces, do we think the present work gains anything from the blotchy impression of a tawny owl which prefaces it. On the other hand, Mr. Pike has been eminently successful

in his landscape views and his pictures of sea-birds in their homes, of which, by the courtesy of the publishers, we are able to give examples. The author's gossipy descriptions of his bloodless, but none the less thrilling, hunting experiences, make pleasant reading, and it is needless to say that we are in full agreement with him as to the need of more keepers in Epping Forest, and of some enforcement of the Protection Acts with reference to the kingfisher in Middlesex.

ENTRANCE TO ROCK-DOVE'S CAVE. (FROM "HILLSIDE, ROCK AND DALE." BY OLIVER G. PIKE.)

An Amateur's Experiences of Sub-tropical Gardening. By H. Morden Bennett, M.A. Simpkin, Marshall and Co. Price 3d.

This pamphlet, reprinted from the *Bournemouth Observer*, contains some interesting practical notes on the bamboos, palms, yuccas, dracænas, aralias, and other sub-tropical plants which the author has been successful in growing in the

somewhat favoured conditions of the East Cliff at Bournemouth. The uniform spelling of the specific names with initial capitals is unpleasantly suggestive of the second-rate nurseryman's catalogue.

Nature-Study (*late Naturalists' Journal*), vol. xii., No. 127.

Our old-established contemporary, under a new name, is making a new departure in issuing, a page or two at a time, a series of "B.F.C. [British Field Club] Nature-Study Handbooks," which may prove useful to teachers. Of the three so far commenced that on entomology evinces the clearest appreciation of the real meaning of Nature-study. The polar and equatorial diameters of our globe, or its distance from the sun, or the heights of the Himalayas, or a list, with heights, of the principal mountains of the world, or a drawing of the delta of Nile or Mississippi, are not points to be achieved by any truly observational training of British school-children.

Received: *The Wealth and Progress of New South Wales*, 1900-1, by T. A. Coghlan, Statistician of New South Wales, from the Agent-General; *The Butterflies and Moths of Europe*, by W. F. Kirby, parts 17, 18 and 19; *The American Botanist*, vol. iii., No. 5; *The Fern Bulletin*, vol. x., No. 4; *The Victorian Naturalist* for November and December, 1902; *The Irish Naturalist*, *The Animal World*, *The Animals' Friend*, *Our Animal Friends*, and *The Agricultural Economist* for January.

NATURAL HISTORY NOTES AND QUERIES.

A Plea for the Mole.—The remarks under the above head do not in all respects tally with our experience here. Instead of "one of the farmers' best and most influential friends—the mole"—being in danger of "extermination," he is more numerous than ever in this district. Farmers do not take the trouble they did a few years ago to keep moles down! and it is a difficult matter to find capable men to catch them. The gamekeeper too, is paramount hereabouts, and wages war against foxes, stoats, and weasels, the mole's enemies. When these animals are allowed full sway the mole has a bad time; or at all events not such a good one as he has in this part of East Anglia.

EDMUND THOS. DAUBENY.

Wild White Mice.—A number of white mice have been killed in a rick in the village and eight or ten captured. There were many piebald. In one of the old farmhouses most of the mice are white. Occasional albinism is to be found in many animals, but such numerous cases of it in one of our wild British rodents have never before come to my notice. Have any of your readers a like experience?

Market Weston, Thetford. EDMUND THOS. DAUBENY.
January 7, 1903.

Encounter between a Duck and a Swan.—One day while watching the birds in the ornamental lake at Grange-over-Sands, I saw a most remarkable encounter between a large swan and a little brown duck. The duck had apparently insulted the swan by trying to cross its path, for it was suddenly seized by the swan and held under the water until I was sure it would be drowned. But at last the swan let it go and sailed majestically away. The duck, after taking breath, looked round to see where its enemy was, and seeing it not far off it rose into the air and deliberately came down, flapping its wings on the astonished swan's back. The swan fled in terror, and the duck, apparently satisfied, quietly swam away.

R. C. LOWTHER.

Blackgame.—An old Scotchman, whose cottage was on the north shore of Loch Rannoch, in Perthshire, once told me of a welcome dinner which he and his family had one Christmas Day. The weather before Christmas was very wild, and one night, while they were all sitting round the fire, which lit up the room with its cheerful glow, the window pane was suddenly driven inwards, while a large black bird fell into the room. This turned out to be a fine blackcock, which in crossing

the loch had no doubt been attracted by the light at the window. (The birds are often seen crossing the loch, which is about a mile wide at this point.) Their Christmas dinner quite compensated for the glass bill.

R. C. LOWTHER.

Attacked by a Nightjar.—Last year I accidentally came across a young nightjar in what was apparently meant to be a nest. Stooping down to look at the tiny little bird I suddenly became aware of a flapping sound close to me, and I found the mother bird making every attempt in her power to drive me away. I could feel the brush of her wings against my cap sometimes, but I had no desire to hurt her chick, so went away.

48, *George Square, Edinburgh,* R. C. LOWTHER.
January 8, 1903.

Swallow's Nest.—Two swallows built their nest in an out-house and laid five eggs. Before they were hatched the hen was killed by knocking her head against the lintel of the door. For a month the nest remained unused and deserted, the eggs cold. After that time the cock bird found another mate, and he and the little hen were very busy for a few days bringing fresh hay and mud to the nest. I did not like to watch too closely, but I certainly wondered what they were doing to the eggs, as no traces of broken eggshell, &c., were to be seen on the ground. I let them bring up their young brood undisturbed, and then removed the nest (it was getting late in the season), when I discovered that they had built a false bottom to it, with a new edging of mud to hold the hay together, and that the new family was brought up above the cold eggs. The false bottom, with mud attached, was easily lifted off, the cold eggs being found intact beneath. I do not know if this is a common occurrence: I have not come across it before.

Angmering Rectory, near Worthing. BEATRICE ORME.

Black Woodpecker.—I have received several letters about this bird, and the facts respecting its occurrence in Britain are accumulating. A letter from a sportsman of Belfast says: "Seeing your interesting letter about the great black woodpecker in *The Times* of December 17, I take the liberty of saying that while staying in Bournemouth, in the early part of the spring of 1887, I observed one of these handsome birds, about two miles from Lyndhurst Road Station, when in pursuit of ornithology. . . . The large bird flew from tree to tree, passing quite close to me, so that I observed the colour of its plumage quite distinctly. . . . Although I have searched the New Forest and other woods in England well, I have not since succeeded in observing another specimen of the great black woodpecker."

This was previous to the time referred to in my memoranda of November last, when some birds were liberated by the late Lord Lilford.

Market Weston, Thetford. EDMUND THOS. DAUBENY.

The Cow Bird (*Molothrus bonariensis*).—Having recently had occasion to look up the life and habits of this bird, and having learned a good deal respecting it, it was with considerable surprise that, glancing through vol. xi. of NATURE NOTES, with no particular aim in view but that of passing away a pleasurable and profitable half an hour, I found on page 83 the following extract from an article "On Cuckoos," by Mr. H. Stuart Dove, F.Z.S., of Table Cape, Tasmania: "Another inhabitant of the United States, and one that migrates from South to North and *vice versâ*, in a manner similar to the bird just described [*i.e.* the yellow-billed cuckoo (*Coccyzus americanus*)], is the 'cowpen' bird (*Molobrus bonariensis*), and this, strange to say, *does* adopt the tactics of the European cuckoo, never building for itself but dropping an egg here or there into the nests of small birds. The molobrus is not of the cuckoo family at all, but belongs to the Sturnidæ or starling family, and on the approach of winter masses in large flocks in the Southern States, thus resembling its cousin, the English starling." Now before proceeding further, it is only fair for me to add that an errata note is included at the end of the Index to vol. xi. as under: "Page 83, lines 18 and 17 from bottom, read 'Cowpen' bird (*Molothrus bonariensis*); line 17 from bottom, for 'Molobus' read 'Molothrus.'" Thus, two of the errors in the aforesaid article do not need any further comment in view of the errata note above referred

to, but I should like to add for the information of readers of NATURE NOTES that the cow bird does *not* belong to the Sturnidæ or starling family, as Mr. Stuart Dove has stated. It is a member of the exclusively American family Steridæ, the hangnests, so called because most species build large pendent nests similar to weaver birds. It has nothing to do with the starlings, although it is only fair to add that many species are outwardly much like starlings in appearance, but they are true Passeres and therefore nearer to the starlings than the cuckoos, with which they have nothing in common excepting the parasitic breeding habits of some species. Mr. Dove in his article calls the bird the "Cowper" bird, and in the errata note it is corrected to "Cowpen." I fail to trace either name, and the correct name seems to be Cow Bird, and it has been named thus from its habit of perching on cattle. I trust these further notes will be interesting and useful to your readers, and have no doubt Mr. Stuart Dove will accept my corrections in the spirit with which they are offered by me. His reference to this bird in the article mentioned above led me astray recently, and I think I have given satisfactory reasons therefor, and it is for this reason, and because others may have suffered a similar fate, that I offer these unpretentious additional notes.

St. Albans, Herts. W. PERCIVAL WESTELL, M.B.O.U.
January 15, 1903.

Tame Trout.—A friend had some trout in a piece of water close to his front door, which he tamed by constantly giving them food. On one occasion he held a worm near the surface of the water. A large trout jumped at the worm, and seizing hold of his fingers cut them to the bone with its teeth by its own weight.

January, 1903. EDMUND THOS. DAUBENY.

Earwigs and the Human Ear.—The supposed fondness of earwigs for getting into the human ear is a question I have watched for many years; and there is but little difference between me and what Mr. W. F. Kirby states in p. 16 of your January issue. It is yet to be proved that earwigs have more inclination to take refuge in our ears than many other insects. Earwigs are nocturnal animals, having an intense dislike for daylight, and when suddenly exposed to it, or driven from their retreat, seek the first hiding place they come across, and in so doing one out of a few millions may find its way into a human ear. When beating for Lepidoptera I have shaken showers of insects on to my head and shoulders, many of which have dived into my eyes, nose or mouth; but though earwigs were commonly among the number, they preferred going down my neck or up my sleeves to anywhere else. The human ear is so protected as to be naturally distasteful to British insects, and none have ever entered mine. I have often heard of the plan Mr. Kirby mentions of using oil to get an earwig out of the ear. This would probably kill it then and there, involving further trouble of extraction, for oil kills insects almost instantly by clogging up their tracheæ or breathing vessels. An oiled feather applied to the sides of a wasp or beetle will prove this. A safer plan, that I have also heard of, is to hold a piece of apple to the ear, and coax the earwig out. The amount of oil or apples used for this purpose in the next hundred years will probably be infinitesimal.

January, 1903. EDMUND THOS. DAUBENY.

Earwigs.—Those Selbornians who live in the country have great opportunities for observing insect life, but I am afraid that this familiarity begets a little carelessness, and haste to record such in NATURE NOTES.

I should like to know at what hour Mr. Daubeny has often seen the earwig folding up its wings. Is there anything extraordinary in the fact of an earwig crawling into a human ear, any more than into the spur of a nasturtium? Self-preservation is the reason in both cases.

When I was a boy I found a hollow elder twig in a hedge, and without thought put one end into my mouth, into which a number of earwigs quickly crawled, but were as quickly discharged to a considerable distance. No doubt every Lepidopterist who has beaten for larvæ has had his ears and neck well supplied with insects of various orders; and this reminds me that very few entomologists call an earwig a beetle.

I should like to suggest to the reader of NATURE NOTES that more interesting matter might be inserted than the repeated repetition (in the present

number, no less than *six* times) of the name and address of a contributor. Surely once is sufficient ; I speak for myself.

13, *Tufnell Park Road, London, N.* FRED ENOCK.

[Whilst it is undoubtedly important that many observations should be personally vouched for and localised, the blame for the too frequent repetition of one name and address rests with the Editor.—Ed. *N. N.*].

I trust Mr. Daubeny will permit a slight correction to his note on earwigs in your issue of December. He twice writes of these insects as *beetles*. They belong to the Dermaptera, an order of insects separated from the Orthoptera by Latreille, and restricted to the earwigs by Kirby. It contains three genera, which have the elytra entirely coraceous and the tail armed with a forceps. The neuration of the elytra is allied to that of the Orthoptera, among which these insects were formerly included.

41, *Holland Park, W.* ERNEST A. ELLIOTT.
December 26, 1902.

The Holly (p. 16).—In reply to "M. J. T.'s" request, I believe your correspondent is quite right in supposing that the holly tree that I wrote about near Christchurch grows on the Bagshot sand formation ; anyhow the nature of the soil seems to me to be the same as exists in and about Sandhurst and Aldershot. I cannot give so full a reply as I could wish because, having let my house at Montreux for the winter months, I have only a few books of reference with me, and of these, three on forestry are on loan to friends. At least one holly of considerable stature grew under an old river bank, where some of its roots must always be in the water, and when the river Stour is in flood the water, I expect, would reach the trunk. The result then of my observations is that the holly likes a shady situation with at least moist if not wet sandy soil, but not stagnant wet ; few trees can stand that. When next at Christchurch I will go fully into this matter, and if the above needs correction or amplification I will write further. I have more to say now arising out of this, but it must stand over for the present.

Hotel Belmont, Montreux. GILES A. DAUBENY.
January 13, 1903.

Meteoric Stones.—May I be permitted to offer a few remarks on Mr. Hastie's communication in the January issue—not in a spirit of controversy, but because I think the question it raises is an extremely interesting one for students of nature. It is nothing less than this : is our cognisance of the existence of a world exterior to our own dependent on sight only, with all its liability to illusion, or are we occasionally favoured with a message from the world beyond the skies in a tangible form, something that we can handle and submit to the most reliable and convincing of our senses—touch.

On approaching the subject from the scientific standpoint we are confronted at the outset with a formidable difficulty, one almost unique in the range of nature-study. No element of periodicity has as yet been observed in the visits of the particular class of meteors we are now discussing. They arrive when no one is on the look-out for them, in a few seconds they have disappeared, either in the air or in the ground. If a competent observer should chance to be a spectator he has no time to bring his instruments into use, and generally the only information obtainable as to what actually occurred during those few seconds is that derived from the compared accounts of witnesses who, taken aback by the strangeness of the event, are often not in a condition to give a very clear account of what they saw. The matter becomes therefore one of credibility, which will present itself in different degrees to different minds, and each individual will of course be allowed to form his own judgment.

Many a popular belief has succumbed under the searching examination of modern science, but it is remarkable that in this particular branch of enquiry the process has been exactly reversed. As Mr. Fletcher reminded the Selbornians who recently visited his department at the Natural History Museum, the scientific world, up to quite a modern period, treated the popular stories on this subject with contempt ; then they condescended to examine them, and now the fall of solid meteors is generally accepted as a scientific fact. Mr. Fletcher (if I did not

grievously misunderstand his remarks) started on his study of meteorites as an unbeliever, and only convinced himself of their ultra-terrestrial origin after patient investigation.

Your correspondent considers it an extraordinary circumstance that meteorites, if they fall from the sky, do not fall down upon human beings, animals, houses, &c., or on roads or pavements; but has he taken into account the very small area occupied by living creatures, buildings, &c., as compared with the total extent of the earth's surface? But damage to property is in some cases reported, and, according to Humboldt, at least four persons have been struck dead by stones falling from heaven.

Mr. Hastie is justified in citing the authority of Sir Robert Ball as to the *ultimate* origin of those meteoric stones being terrestrial and volcanic. I do not, however, understand Sir Robert Ball as putting forward this view as a completely satisfactory hypothesis, but as the least improbable of the many theories which have been advanced, all of which he regards as open to objection. This is, I must admit, equivalent to a definite pronouncement against the theory of celestial origin, and coming from such an eminent authority it is entitled to the highest respect, but I have not the advantage of knowing the reasons which have led him to this opinion. Sir Robert has himself brought vividly before our mind's eye the millions of orbs in the interstellar spaces which our natural eyes cannot see, simply because they do not, like the visible stars, send out light; and he has demonstrated in a masterly manner the effects resulting from a collision between two of these dark bodies, an occurrence of which we had an ocular example not very many months ago. It is admitted that the shooting stars have, previously to their appearance as such, had their own paths in ultra-terrestrial space, and many of these cannot be identified with known cometary or other swarms. Where then is the difficulty of believing that there may exist in space bodies of an intermediate order between these two classes, large enough to pierce the earth's atmosphere and reach its surface, yet not so massive as to cause serious damage to our planet?

With respect to the gunnery experiments, it is of course true that the force of gravity, which is adverse in the case of a projectile, would be in favour of a body approaching the earth from space; but from what we know of planetary velocities I think gravity would be a very unimportant factor in the problem. In any case the resistance of the air, as an imperfectly fluid medium, to a body moving at such a velocity, must be enormous, and whatever tended to increase the velocity would, once the atmosphere were entered, also lead to increase of the resistance, and consequently the retardation.

The volcanic theory certainly derives some force from the discovery that some masses of native iron, such as the Ovipak, and those found in New Zealand, formerly supposed to be volcanic, are probably telluric; but I think this would only apply in volcanic districts. It is easy to understand that a smelting process might take place in the great heat of an active volcano; but with regard to the products of volcanoes which may have existed "many ages ago in the world's history," would a substance so susceptible to chemical action as iron retain its metallic character throughout those ages? Would it not (assuming that it has remained in contact with the earth, and not in the meantime been projected into space), have been long ago completely oxidised, sulphuretted, or otherwise converted into ore?

As regards the lightning theory, it should be noticed that on several occasions on which a meteoric stone has been seen to fall it is distinctly stated that the sky was at the time clear. This circumstance, coupled with the fact that before the nature of lightning was generally understood such stones were by many thought to be "thunderbolts," may have given rise to the familiar expression "a bolt from the blue."

Mr. Hastie asks on what theory it is that meteoric stones, as it is said, explode just at the very time that they get very near to the earth's surface. I think he must have misunderstood what has been said in this respect. I do not suppose any one believes that meteors explode at any particular distance, near or far, from the ground. The obvious explanation is that they explode when they have acquired sufficient heat, through retardation, to produce a disruptive effect. This may happen in a higher and rarer, or lower and denser, stratum of the

atmosphere according to the size and quality of the moving body. Very small bodies, as shooting stars are believed to be, would explode, or be dissipated, at very high altitudes—forty or fifty, or perhaps hundreds of miles (if the atmosphere extends so far); larger stones in a denser medium nearer the earth's surface, and some perhaps not at all. It may be remarked in this connection that meteorites (or fragments of them) are stated to give out gases under the airpump.

My own view is that, taken altogether, the evidence at present in our possession points to the origin of these bodies being celestial rather than terrestrial. The subject, however, is not one on which to dogmatise, and I think discussion should be welcomed by all earnest seekers after truth.

Having already occupied so much space I will not attempt to deal with Mr. Hastie's very ingenious hypothesis respecting comets' tails, which, by the way, is curiously reminiscent of Seneca's dictum on the same subject, quoted by Guillemin. "Comæ radios solis effugiant." This, with a slight alteration, might be made to read: "The hairs [comets' tails] fly [in] rays of the sun." I cannot conclude, however, without confirming from my own experience Mr. Hastie's statement that the lustre of Arcturus was not diminished by Donati's comet passing in front of it. I had the good fortune to view both objects through a refractor of about six inches aperture, the star at that time being very near the head of the comet; and I shall never forget the magnificent spectacle presented by a star of the first magnitude shining in its full splendour *through* the comet—itself the most brilliant object of its kind that has appeared in the past century.

Haverstock Hill, FRANCIS H. BAKER.
January 9, 1903.

Eoliths.—I should be glad of any assistance which any of your readers can give me as to the evidence bearing on the age of the deposits containing the so-called "Eolithic" flint-implements. I know that French anthropologists assert the existence of such implements in Pliocene, or even Miocene, beds. Are these flints closely similar to those from our plateau-gravels, and is the age of the beds precisely determined from mollusca present in them? I know of no English record having any degree of precision from any bed lower than the Cromer Forest-bed, from which Mr. Lewis Abbott obtained some alleged implements. Have these been figured? There is an interesting paper on the subject in the recently issued number of the *Essex Naturalist*, but in speaking of the origin of the plateau-gravels, the writer does not allude to the important remarks made by Prof. J. W. Gregory, in his "Great Rift Valley," on the cutting back of the North Downs and the beheading of their river-valleys. Some years ago I read a suggestion made, I think, by Mr. Moule, primarily with reference to Dorsetshire, that if India were submerged the rude handicrafts of the hill men would survive and might be supposed to be far earlier in date than the really contemporary civilisation of the plains. A similar suggestion might be made with reference to the plateau eoliths and the river-valley palæoliths. What I want to obtain, therefore, is some clear evidence as to the greater antiquity, not of the implements, but of the plateau-gravels, and also some clue to their relations to a former physical geography and to the way in which these implements got into the gravels. F. G. S.

SELBORNE SOCIETY NOTICES.

Council Meeting.—The usual monthly meeting of the Council will be held at 20, Hanover Square, W., on Wednesday, February 11, at 5.30 p.m.

Mr. Wilfrid S. Durrant has been elected a member of the Council.

Field Club Committee.—After the Council Meeting on February 11, at 6.15, there will be a meeting of the Field Club Committee, and the Report for last season will be read. *Any member* of the Selborne Society interested in the Field Club Rambles is *particularly* requested to attend.

New Members.—John Carey, Esq., Stirling; Lt.-Col. A. Yaldwyn, Montreux; J. M. Marshall, Esq., and Mrs. Marshall, Herne Hill; C. Beaumont, Esq., Wilmslow; F. S. Clayton, Esq., Surbiton; Miss Evelyn M. Linder, Buckhurst Hill; Mrs. Talbot, Barmouth; Miss Mühlberg and Miss Hilda Mühlberg, Herne Hill; Mrs. M. L. Cooke Yarborough, sen., Doncaster; Mrs. H. Jealous, Hampstead; Sidney Russ, Esq., St. John's Wood; Maurice Randall, Esq., Compayne Gardens; G. P. Norton, Esq., Croydon; Miss Hart Davis, Reading; David Ross, Esq., Kensal Rise.

Donations and Subscriptions.—The Council beg to acknowledge the following Donation: C. Surgey, Esq., 16s.; and the following Subscriptions over 5s.: Thos. Layton, Esq., 10s.; the Comtesse A. Jenison, 10s.; F. S. Clayton, Esq., 10s. 6d.; H. Chipperfield, Esq., 10s.; W. H. Warner, Esq., 21s.; J. S. Budgett, Esq., 21s.; Mrs. Hubbard, 10s.; Miss A. Walker, 10s.; John W. Powell, Esq., 10s.; A. T. Hall, Esq., 10s.; Claude Leatham, Esq., 10s.; Miss Linder, 6s.; Mrs. Turle, 10s.; Miss E. Nicholl, 20s.; C. W. Ware, Esq., 10s.; Hon. Walter Rothschild, 21s.; Miss Lomer, £2; Mrs. Lomer, 20s.; W. J. Carver, Esq., 20s.; W. H. Maw, Esq., 10s.; Cosmo Blore, Esq., 10s.; Rev. F. M. Millard, 10s.; Miss M. W. Rankin, 7s. 6d.; Mrs. Silkenstadt, 10s.; Mrs. Brightwen, £5; Mrs. Robinson, 10s. 6d.; Miss Cheetham, 10s.; Mrs. Price, 10s.; Mrs. Picton Turbeville, 10s.; Geo. P. Craven, Esq., 10s.; Miss E. Shadwell, 10s.; Mrs. Hogg, 20s.; Miss E. B. Brand, 10s.; Miss J. Brand, 10s.; W. E. Milne-Redhead, Esq., 7s. 6d.; Miss Brodrick, 10s.; Mrs. W. Greenwood, 21s.; Lady Simeon, 10s.; W. Whitwell, Esq., 21s.; Richardson Evans, Esq., 10s.; Peter Hastie, Esq., 10s.

SELBORNE SATURDAY AFTERNOONS.

December 13.—Thanks to the kindness of Dr. A. Smith Woodward, Keeper of the Geological Department, the Selbornians spent an interesting afternoon in the well arranged Palæontological Galleries of the Natural History Museum. Dr. Smith Woodward had chosen for his subject the Fossil Mammals of South America, and he dealt especially with the giant sloths (*Megatherium americanum*, *Mylodon robustus*) and armadilloes (*Glyptodon reticulatus*, &c.) belonging to the *Edentata*. The skeletons of their present-day representatives were also referred to and compared with these extinct fossil remains and plaster casts. The valuable exhibit lent by Dr. Moreno, Director of the Museum of La Plata, was next demonstrated. The most interesting objects in this case were portions of the actual skin of a giant ground sloth (*Grypotherium listai*). The outer surface is covered with hair, but on the inner surface numerous small bones are embedded in the skin itself. The best specimen of skin had been found in a cavern in Consuelo Cove, Last Hope Inlet, Patagonia, with the remains of the sloth and of other mammals, including man. This curious cavern had apparently been used to keep the sloth in captivity, perhaps as an object of veneration, a chamber having been formed by man by means of barriers of stone, with a small opening to serve as an entrance. The Natural History Museum had recently acquired a piece of the skin of this animal, as also various bones, from the same cavern. At the time of the formation of the Isthmus of Panama the sloths had found their way into North America, their fossil remains having been found there. On the other hand, hoofed animals had migrated into the South American continent by the same means. Dr. Woodward also gave details of *Toxodon platensis*, belonging to the *Ungulata*. There was some evidence pointing in the direction of the existence of a former Antarctic continent connecting the southern point of South America, South Africa and Australia. This hypothesis also received support from the recent discovery by Dr. Moreno of the remains of a fossil land tortoise, *Miolania morenoi*, in Patagonia, exhibiting features in common, especially as regards the structure of the skull, with *Miolania oweni* of the Condamine river, Queensland, and also with *Miolania platyceps* of Lord Howe Island in the South Pacific.

January 17.—The meeting place was once more the Natural History Museum at South Kensington, to hear Mr. W. P. Pycraft in his "Talk about Birds." During the ninety minutes which Mr. Pycraft was good enough to give us he contrived to combine the maximum of interest with the maximum of instruction. Leading the Selbornians from species to species he dilated with agreeable clearness upon each in turn; drew attention to habits and environment, the latter in many instances reproduced with complete fidelity; noted differences in colouration; how some birds had left to them mere fragments of wings owing to want of use; showed wherein birds diverged and wherein they agreed; how much more effective was their presentation in modern fashion amid natural surroundings than in the old stiff way, and furnished many other details with regard to ornithology, to which his audience listened with unflagging interest to the end. So far as the amenities of a public gallery would allow, hearty thanks were voted to Mr. Pycraft for his unstinted services.

FUTURE ARRANGEMENTS.

Saturday, February 14.—**Natural History Museum, Cromwell Road, S.W. (Botanical Department).** Meet Mrs. Percy Myles in the Central Hall, 2 to 2.15. Dr. Rendle has kindly consented to arrange for a Demonstration in the Botanical Gallery.

Saturday, February 28.—**To visit Sir John Soane's Museum, 13, Lincoln's Inn Fields.** Assemble at the Museum from 2 to 2.15. The Curator, G. H. Birch, Esq., F.S.A., has kindly undertaken to conduct the Selbornians over the Museum himself.

ANSWERS TO CORRESPONDENTS.

E. S. Russell.—The fruit of *Trapa bicornis*, the "Ling" of the Chinese, the seeds of which form a considerable article of food. It is a floating aquatic plant, belonging to the *Onagraceæ*, and to the same genus belong the Jesuit's nuts of Venice, Water-caltrops or Châtaigne d'eau, and the Singhara of Kashmir. The horns of the fruits serve to anchor them during germination.

NOTICES TO CORRESPONDENTS.

1. All communications for NATURE NOTES must be authenticated with name and address, not necessarily for publication.

2. The return of an unaccepted contribution can only be guaranteed when it is accompanied by a stamped and addressed envelope. We cannot undertake to name specimens privately, to return them, or to reply to questions by letter.

3. All communications for any number must be in the Editor's hands by the 10th of the preceding month.

4. Communications for NATURE NOTES, books for review, specimens for naming, &c., should be addressed to the Editor, PROFESSOR BOULGER, F.L.S., F.G.S., 11, Onslow Road, Richmond, Surrey.

5. For the supply of the Magazine to others than members address the publishers, Messrs. JOHN BALE, SONS AND DANIELSSON, Ltd., 83-89, Great Titchfield Street, London, W.

6. Letters connected with the business of the Society, subscriptions, &c., should be addressed to the Secretary, Mr. R. MARSHMAN WATTSON, 20, Hanover Square, W.

Nature Notes:

The Selborne Society's Magazine.

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OBJECTS OF THE SOCIETY.

To preserve from unnecessary destruction such wild birds, animals and plants as are harmless, beautiful, or rare. To discourage the wearing and use for ornament of birds and their plumage, except when the birds are killed for food or reared for their plumage. To protect places and objects of antiquarian interest or natural beauty from ill-treatment or destruction. To promote the study of natural history.

SELBORNIANA.

Annual Meeting and Conversazione.—Our President has fixed the evening of Tuesday, May 5, for our Annual Meeting and Conversazione, when he will deliver his address and the usual business will be transacted.

Proposed Visit to Selborne.—The Field Club Secretaries propose to make arrangements for the visit to *Selborne*, postponed from last season, to take place on June 13 of this season, under the able guidance of Dr. Bowdler Sharpe. The names of all who intend to go must be sent to Mrs. Percy Myles, at a date which will be given in our next issue, when further particulars will be announced.

What are the Duties of Selbornians?—Miss Blanche Atkinson, of Tyn-y-ffynon, Barmouth, N. Wales, asks us to state that she is willing to send supplies of her excellent pamphlet with the above title, reviewed by us in 1895, gratis to any of our readers on receipt of stamps to cover postage—3d. for 6 copies.

PARSLEY FERN.—We are glad to learn that one of our correspondents has brought our note in last month's issue under the notice of the Lake District Association, who will at once take the matter into consideration.

SAVE THE SKYLARKS!—A letter of protest against the sale of this most melodious of songsters for food appeared recently in *The Standard*, the writer of which truly remarks that the fact that the birds so sold are imported in no way lessens the revolting philistinism of the practice. We have received the following letter on the subject from Miss Rose Turle:—

It must indeed be a "savage breast" that is not soothed by the charm of the skylark's song! Often indeed a sightless song—as Shelley so well puts it in his matchless ode "To a Skylark":—

"Thou art unseen, but yet I hear thy shrill delight."

And yet—oh, the pity of it!—one's heart is made to ache by the sight of them, strung up by those tuneful little throats in the poulterers' shops, and all for the sake of the one dainty mouthful that the breast affords! One can but rejoice that the close time for these and other wild birds has arrived, and must trust that those who *have* partaken of the dainty morsel will, on hearing its spring-song—the "rain of melody"—say "never again." In this connection I cannot do better than quote the following, taken from a delightful little book, "St. Francis of Assisi," by Brother Leo of Assisi, edited by Paul Sabatier, translated by Sebastian Evans:—

On St. Francis' Love for Larks.—"Above all other birds did he love the crested lark, the little bird that in the vulgar tongue is called *Lodola capellata*, and he would say of her: 'Sister lark hath a hood like the Religious, and an humble bird is she, for she gladly goeth by the way to find her a few grains of corn, and so she findeth them even among the dung, she taketh them therefrom and eateth them. When she soareth she doth praise God right sweetly, even as the good Religious that doth look down on earthly things, whose conversation is evermore in Heaven, and whose intent is always towards the praise of God. Her garments, to wit, her feathers, are like unto the earth, and she giveth ensample unto the Religious that they wear not delicate and gaudy garments, but such as be vile in price and colour even as the earth is viler than the other elements.'

"And for that he did perceive these similitudes in them, he did most gladly look upon them. Therefore it did please the Lord that these most holy birdies should show some token of the love they bare unto him in the hour of his death. For on the Saturday evening after Vespers, before the night wherein he passed away unto the Lord, a great multitude of birds of this kind that are called Larks came above the roof of the house wherein he lay, and flying a little way off did make a wheel after the manner of a circle round the roof, and by their sweet singing did seem to be praising the Lord along with him.

"We that were with the Blessed Francis and have written these things do bear witness that oftentimes have we heard him saying: 'And I ever have speech with the Emperor I will entreat him, and persuade him, and tell him that for the love of God and of me he ought to make a special law that none snare nor kill our sisters the Larks nor do any evil unto them. In like manner that all the Mayors of the Cities and the Lords of the Castles and towns be bound every year on the day of the Nativity of our Lord to compel their men to throw wheat and other grain along the roads beyond the cities and walled towns, so that our sisters the larks may have whereof to eat, and other birds also on a day of so passing solemnity, and that for reverence of the Son of God Whom on such a night the most Blessed Virgin

Mary did lay down in the stall betwixt the ox and the ass, whosoever hath an ox and an ass be bound on that night to provide them provender the best that may be, and in like manner also that on such a day all poor folk should be given their fill of good victual by the rich.' "

Would that "sweet St. Francis" were with us still to plead anew for our "Sister Lark."

Death of an Old Contributor.—Many of our older members will hear with regret of the death of Mr. W. J. C. Miller, which occurred on February 11 at Kingswood, Bristol. William John Clark Miller was born at Beer Head, in South Devon, on August 31, 1832. Graduating from the Independent College at Taunton, at the University of London, but prevented by the theological tests from entering that of Cambridge, he became Professor of Mathematics and Vice-Principal of Huddersfield College. Here he began to edit the mathematical columns of the *Educational Times*, collecting the annual volumes of Questions and Solutions until 1897; and, with the object of fostering a love of Nature, literature and general knowledge among the students, he started, and for some years edited, the *Huddersfield College Magazine*. In 1876 Mr. Miller was appointed Registrar to the General Medical Council, and soon afterwards took up his residence at Richmond. Here he took an active part in the local Athenæum, and in the then existing branch of the Selborne Society, and was the founder of a Literary Society over which he presided from 1887 to 1898. On his retirement from active work in 1897 he went to live at Bournemouth, when his friends had the pleasure of having a collected edition of his essays and Nature-studies edited, with a biographical introduction, by Mr. H. Kirke Swann. In this volume, issued by the publishers of Nature Notes, are nine papers that Mr. Miller contributed to our columns, with eight others, mostly literary. It also contains a portrait of the author.

Nature Photograph Competition.—We have been asked to call attention to a series of prizes, consisting of a gold, two silver, and one bronze medal, offered by the Portsmouth and Gosport Natural Science Society for the best series of lantern slides illustrating the life-histories of birds, animals or insects photographed in their natural surroundings. Full particulars can be obtained from the Hon. Secretary, Mr. Percy Maggs, Pisgah, Brougham Road, Southsea.

CAPE FLOWERS AT HOME.

WHEN I saw the announcement of an article on Cape Flowers in the November number by Mrs. Wilfred Durrant, I turned to it with a thrill of expectant delight, but a shudder went through me when I found that the first words of the article were: "The shelves of our green-houses and conservatories." Mrs. Durrant undoubtedly made her subject very interesting, but it reminded me of Mrs. Green's paper in the *Nineteenth Century* on the poor Boers imprisoned in St. Helena. I do not want to say a word against gardeners or gardening, nor do I grudge our floral beauties being made accessible in the only possible manner to the colder countries. Indeed, I enjoy our own hot-houses of tropical plants very much; but reading about my poor floral friends languishing or flourishing in a state of captivity made me desire to say something of them, whether in their own luxurious abode or in their courageous struggle for life under adverse circumstances.

Mrs. Durrant naturally, finding these flowers all together in the same green-houses, speaks of them all as if "they grew in beauty side by side." Perhaps there is no flora in the world which is more dainty in its localism than that of South Africa. The Cape Peninsula, for example, has a flora much more distinct from that of the Karroo, less than 100 miles away, than the vegetation of England is from that of Russia. Some heaths are found inhabiting a few hundred square yards and may be sought for in vain anywhere else. The silver-tree grows profusely on the slopes of Table Mountain, but obstinately refuses to travel, and indeed even in its own habitat it is difficult to grow it in captivity. You may stand on a dry, exposed mountain-slope, and will find that every one of the hundred species around you has its own peculiar way of adapting itself to its hard conditions. Most of them narrow their leaves; many of them cover their leaves with silky hairs; some of them surround their leaves with a protective margin of red, and by a perpendicular twist turn up this margin to the pitiless sun. From there you walk a hundred yards and down into a ravine whose channel is fretted with a perpetual stream; at once the plants around you are as entirely different as if you had stepped from a garden to a green-house.

One of the most interesting examples of this localism I found near a place called Piquetberg, where the last geological remnant of what was once a mountain of Table Mountain sandstone is resting on a wide plain of the older clay-slate. This little stack of rocks pathetically shows its relationship to its gigantic cousins visible on the horizon by cherishing in its nooks and crevices a whole set of plants which you will find over there, but for which you will search the surrounding plain to no purpose.

Some of Mrs. Durrant's statements want a certain amount of correction which I hope she will not think unkind. For example,

the Cape leadwort, the *Plumbago capensis*, she calls the "delicate creeper of our green-houses." What it may be in its degenerate captivity I do not know. With us it is a sturdy hedge, or a large, bold and independent shrub. It is true it has a habit of boisterously swarming up a convenient background, but even then it would scorn the word "delicate," and would indignantly deny that it creeps. We love the plant here as a hedge because of the cheerful way in which it defies the red dust of our south-easters. Towards the end of summer, all the strangers, like oaks, pines and hakeas, are disreputably smirched with a thick coating which any odd shower of rain turns into streaks of mud. The plumbago alone smiles with its glossy leaves and clusters of blue flowers, as if it and the south-easter were old friends.

Amongst the characteristic plants of the Cape, many have fleshy leaves or stems, and amongst the crassulas, stapelias and euphorbias, Mrs. Durrant, not unnaturally but erroneously includes cacti. Of course the prickly pear, some species of *Opuntia*, has established itself all over the land and has become an ineradicable nuisance, but it does not belong to us any more than it does to the shores of the Mediterranean, where also it is found in intrusive profusion. There are also many cacti which grow with perfect ease in our gardens, but as a matter of fact there is only one native cactus in the whole of South Africa, and that is a miserable little filiform arrangement, a degenerate poor-relation sort of thing that grows up in Natal, and is not abundant even there. This, I suppose, ought to be one of the mysteries of botanical science. If no cactus at all had ever been found here, we could attribute their absence to the accidental non-transmission of seed. But how in a country so eminently adapted to cactus life there should be just this one degenerate little specimen, belongs to Lord Dundreary's class of things which "no feller can understand."

With regard to the *Tritonia*, I should like to put a query to Mrs. Durrant's statement that the name "comes from the Greek for weather-cock, as the stamens hang out from the cups in most inconstant directions." It may be ignorance on my part, but I do not know any such use of the word in Greek. In any case, the derivation seems to me very far-fetched, nor is it even in any way special, for so many flowers do the same sort of thing. Could we not suppose from the shape and beauty of the flower that some poetical and classical botanist thought, when he came across it, that he heard "old Triton blow his wreathed horn"?

Yet another remark, which is neither botanical nor etymological. Mrs. Durrant says that for many years "the native tribes and the jealousy of the Dutch Boers prevented the march of exploration." Must we trample on our foes even in the calm region of botanical science? The Dutch-descended folk of South Africa have brought with them their traditions and are enthusiastic lovers of flowers. Every farmer's wife regards as the pride and glory of her little domain the fenced-in "bloem-tuin"

or flower-garden, which generally occupies the place of honour in the homestead. No botanist ever got anything but a hearty welcome from any South African farmer. Often, if he is a wise man, he can get a good deal of instruction as well as a welcome, for these Boers, uneducated as they may be, have a keen eye for the plants and animals that come into their life, and sometimes have an astonishing knowledge of their natural properties.

Mrs. Durrant is doubtless quite correct from the European point of view in calling the *Streptocarpus* the Cape primrose. The leaves are certainly very like, and so also are the habits of the plants, but popular names go rather by the flowers and by something which is vaguely apprehended as the life and soul of the plant. What we call the Cape primrose here is the *Œnothera*, an introduced plant of large yellow flowers, brilliant with morning dew, especially abundant on a river's brim. Where this flower grows, its relation to the children is the same as that of the primrose in England. The *Streptocarpus* grows in shady ravines or rocky nooks where only very adventurous children ever see it.

The star of Bethlehem, *Ornithogalum*, is very justly praised by Mrs. Durrant. The children here call it "chincherichee" because of the whistling noise made by the stems when they are rubbed together. This is, of course, the original home of our own species, but I have always been under the impression that some of them come from the Holy Land, and that the name, "star of Bethlehem," signified something more than a mere poetic resemblance. It is too bad of Gerard to call them "wild field-onions." He might as well have given them the wider name of lilies. Mrs. Durrant is correct in saying that they are snowy-white, but correct only up to a certain point. Many of them are quite a brilliant orange, and even the white ones have a deep, dark splash in the centre. The flower is a favourite one with us for decoration, for it remains unwithered for about a fortnight, and the upper buds continue to open. A curious thing is that, when these flowers are cut and put in a vase, the dark central splash gradually disappears and eventually the flower becomes truly snowy-white.

Another flower justly praised is the *Agapanthus*, one of our widest spread species: I have seen it growing in the East quite as freely as in any garden, and it blooms on Table Mountain as well. As a rule the flowers are, as Mrs. Durrant says, cornflower blue, but side by side with the blue ones will be found others that are white, and these are just as beautiful. The interchange between white and blue in the same species is very remarkable at the Cape. We see it in the *Plumbago*, the *Lobelia* and the *Lobostemon*, to mention three of our commonest flowers. Our little native violet, which is a rare plant with us, imitates its cousin, the garden violet, in the same property.

Mrs. Durrant speaks of the everlastings* as if they were

* She specifies *Helichrysum arenarium*, but that is not a South African species at all: our commonest exported flower is *H. vestitum*.

pretty well all of the same species. As a matter of fact, there are large numbers of them, varying with different localities, so that there is no single one which to us takes the place of the daisy in England. We are rather proud of our variety in this respect, and sometimes in the Dutch farmhouses one finds the most exquisite permanent decorations made up of these everlastings and dried grasses.

One must not suppose from the number of beautiful flowers that have come from the Cape that they always form a prominent feature in the landscape. Just after the rains, in what we call winter which is really spring, there is a great and universal outburst of oxalises and various kinds of marigold, so that every open field of grass becomes a veritable carpet; but, taking the whole country round and the whole year round, the vegetation is not at first sight of a very striking description. Whether it be the open Karroo, or the dry mountain slopes, or damp mountain plateaux, the first impression is that of sameness. On the Karroo you pass mile after mile of the rhenoster-bosch, *Elytropappus rhinocerotis*, varied by a few more miles of some other composite. On the mountain side there will be millions of such commonplace plants as the *Cliffortia*, *Rhus*, *Agathosma* and all sorts of heath-like shrubs. On a mountain plateau or on a marshy flat you come across acre upon acre of *Restiaceæ*. The walrus and the carpenter would continually have to "weep like anything to see such quantities" of the same sort of thing. The monotony, however, is only apparent, for it is by diligent search amongst these bushes, or in the very heart of these *restios* that the botanist finds his daintiest morsels nestling in what shelter they can get. It may be a delicate orchid, or perhaps a sweet-scented gladiolus.

The Karroo plants are peculiarly interesting for their magnificent struggle for existence. One plant is specially ingenious, *Cotyledon reticulata*. Its stem, swollen and succulent, is a desirable object, but is rendered quite inaccessible to the roving bands of antelope of old, or of cattle now. It puts forth every year a lovely and delicate inflorescence, intricate as a spider's web and tasty as young shoots of asparagus. At a distance it looks as if this inflorescence was going to be an easy prey. The hungry antelope approaches, sniffing and confident, but he finds that every attempt to seize the dainty morsel is barred by an almost invisible, but very effective, prickly wire cage. The fact is, that each year when the delicate inflorescence has done its work, the peduncles of it harden and are slightly raised, so as to leave room for the next year's flower. Meanwhile the old year's wire cage falls off, and thus the plant lives for ever.

The natural consequence of this kind of flora is that the botanist is always coming across some delightful surprise. It may be away on the Cape Flats, where the winds have formed sand dunes barely held together by quickgrass and a kind of Mesembryanthemum called the Hottentot's fig. Anything

more unpromising for a beautiful flower could hardly be imagined, and yet for a short period in the middle of Spring some of these hills are turned into a dream of glory by the bursting out into flower of a little recumbent and apparently despicable plant (*Grielum*), which is our best representative of the rose family. Its large yellow bloom is a worthy rival of the white dog-rose, and as far as I know, it grows nowhere else than in these almost inaccessible sandy wastes.

In the Cape Peninsula we are, I believe, richer in orchids than any other part of the world, but with few exceptions these orchids take a deal of searching to discover. In fact, as an unsympathetic and irreverent unbotanical friend of mine remarked grumblingly, "These orchids are very awk'id things to find"; but what a delight they are when found! Take the little spider-orchid, the *Bartholina pectinata*. It is the sweetest, the daintiest, and the most economical plant in existence. It nestles in the shadow of one of the larger shrubs, and unless you stoop you will not find it. Its dear little bulb, not much bigger than a pea, produces one little round leaf which lies flat on the ground and is thoroughly protected by silvery hairs. Then a slender stem, similarly protected, thrusts itself up to its full height of four or five inches, and on the top of this there is poised a perfect dream of ethereal loveliness. The lip of the flower is large in order to attract the little insects for which it has been specialised, but if it were also heavy, it would be too much for the slender stalk, so the lip is divided into nine or ten slender fingers, white and delicately traced with purple. This little plant, which looks as frail as if a breath would blow it away, is nevertheless so hardy that once I sent a specimen of it packed in a cigar box, and after five days' jolting in train and postcart it was taken out of the packing perfectly uninjured and lasted in water for a fortnight after that, sitting in state, as it were, and receiving a continuous stream of admiring visitors. Now if one of your greenhouse men were to offer to show me this spider-orchid growing in a pot, I should of course admire his ingenuity and skill, but I would say to him—"Show me something from Peru, where I am never likely to go, or one of the beautiful monstrosities of your own invention, but don't degrade my little Bartholina in my eyes by taking it away from all its reasons for existence."

In a country of such genial climate as ours, which now has commercial relations with all parts of the world, it is not surprising that many of the plants which have been accidentally or purposely introduced have made themselves at home, or even run riot in the land. The oak and the pine I have already mentioned as being at home, and very welcome they are; and I have already branded the prickly pear as a nuisance. The Australian wattles have also come to stay on their own account, and amongst shrubs there is the *Physalis peruviana*, which has not only swarmed over the whole country,

but has also arrogated to itself the name of the Cape gooseberry. Of the same family is the little black nightshade, which is poisonous with you in Europe, but in our sunny clime has laid all its deadliness aside. It is still the same species, but children eat it freely. There is a herb, sometimes becoming a shrub, which has distributed itself along all the river beds in the Karroo. The farmers from near Kimberley sent down some specimens to our agricultural department and begged to be told how to eradicate this "Scotch thistle." Professor MacOwan, with his usual caustic humour, told them he would gladly help to eradicate it, but that in the first place it was not a thistle, and in the second place it was not Scotch. It turned out to be a Mexican poppy, *Argemone mexicana*. It is a beautiful plant and has a beautiful flower, but the farmers would rather see it waste its sweetness on the desert air.

Our forest regions, which have been sadly spoiled by carelessness and recklessness, would deserve pages of description by themselves, but I am not so familiar with them as with the flora of the Cape Peninsula itself. A single sentence from the Government Report will give an admirable picture of the kind of flora there. If a bit of the forest has been accidentally burnt down, it is necessary to replant it immediately with well-grown young trees, a large stock of which is kept in hand for the purpose; otherwise the undergrowth will get the upper hand. The Report says: "In a few months, if left to itself, the soil will be covered with a luxuriant growth of ferns and weeds, followed by an impenetrable thicket of bramble, Helichrysum, Metalasia, Cape Gooseberry, Psoraleas, Rhus and Pelargoniums, in which state planting becomes difficult and expensive."

Perhaps I have said enough to give a general sort of idea of our flora as it is at home. Those who wish to know more about it without diving into specialised scientific volumes will find a very good account in the "Official Handbook of the Cape and South Africa," published by Messrs. J. C. Juta and Co., Cape Town. In this book the chapter of the flora was written by Mr. Bolus of Cape Town, the well-known authority on orchids, and the chapter on woods and forests was written by Mr. Hutchins, the Conservator of Forests. We are of course proud of all the glories we have given to European gardens, but botanical knowledge is gradually spreading amongst us and we are continually discovering other beauties in our flora at home than such as appeal merely to the eye or the nose. Many of the great problems of evolution are open for investigation in South Africa to a degree unsurpassed by any other part of the world.

F. C. Kolbe.

REVIEWS AND EXCHANGES.

The Natural History of Aquatic Insects. By Professor L. C. Miall, F.R.S. With illustrations by A. R. Hammond, F.L.S. Reprint. Macmillan and Co. Price 3s. 6d.

If there are any of our readers who have not yet made the acquaintance of this classic, worthy follower that it is of the works of Réaumur, Swammerdam, or De Geer which it commemorates, they have now an opportunity of doing so at a reduced price. Almost every tyro in Nature-study must have noticed whirligig beetles, water-scorpions, and water-boatmen, to say nothing of gnats, dragon-flies and may-flies; but here he will find their life-histories set forth and fully illustrated. There is a fascinating account of the confusion of the drone-fly with the honey-bee which led to the ancient belief in the production of bees from putrid carcasses, and anglers might do worse than study in these pages the originals of some of their "flies."

The Nature Student's Note Book. By the Rev. Canon Steward and Miss Alice E. Mitchell. Constable and Co. Price 2s. net.

This is a well-conceived and well-executed little book intended for training-college students. It contains brief monthly lists of animals and plants to be observed, with notes on weather and folk-lore and garden and field operations, a summary of the Wild Birds Protection Acts, a list of books of reference, and detailed tables of the classification of mammals, birds, insects and flowering plants. The first part is interleaved, and the only faults we have to find with the work are that the tables are printed in dangerously small type and that the interleaving will hardly suffice for more than one season's observations. A quarter of a century ago the students of the Royal Agricultural College had similar note-books, but they were, we believe, produced in a cheaper form so as to be renewable yearly.

The Parents' Review for February contains the second of the Fésole Club Papers by W. G. Collingwood, entitled "The Boughs of the Branstock." This is an admirable Ruskinian drawing-lesson, teaching the student how to look at a tree.

Haileybury Natural Science Society. Report for 1902.

This is a brief statement of good sound all-round work. We appreciate the candour of the statement, under "Ornithology," that "there was a great deal of egg-collecting, occasionally leading to some observations of birds," and that "some of the best collectors are merciful to the birds, though this is not an invariable characteristic."

Hampstead Heath Protection Society. Sixth Annual Report.

This report shows that the Society has most effectively held a watching brief on behalf of Hampstead Heath since 1897. Such local interest is essential for the protection of public property.

Received:—*Thirty-seventh Annual Report of the American Society for the Prevention of Cruelty to Animals; Journal of the New York Botanical Garden* for January; *The American Botanist* for December, 1902, and January, 1903; *The Butterflies and Moths of Europe*, by W. F. Kirby, Parts 20 and 21; *Board of Agriculture Leaflets*, Nos. 61, 74, 75, 76, 77 and 78, on Sheep-scab, Feeding-stuffs, Root-knot Disease in Cucumbers and Tomatoes, Cucumber and Melon Leaf-blotch, Finger-and-Toe in Turnips and Liver Disease in Poultry respectively; *The Irish Naturalist, Nature-Study, Humanitarian, Our Animal Friends, The Animals' Friend, Animal World*, and *Agricultural Economist* for February.

NATURAL HISTORY NOTES AND QUERIES.

Rats.—The increase in the numbers of rats hereabouts is quite remarkable. Owing to them ricks require thatching, houses are invaded, and game, rabbits, poultry, eggs, grain, and roots, are laid under heavy contribution. One commonly sees banks honeycombed for 50 or 100 yards by their burrows, in the proximity of farmyards, ricks, and "pies," or earthed-up heaps of mangold wurzel and other roots. A few are killed with ferrets, or when a rick is threshed; and at certain times of the year poisoned grain is placed in their burrows by the game-keeper. But as no systematic war is waged against them they seem to increase in numbers, size, and boldness year by year. If the lives of their natural enemies, foxes, stoats, weasels, owls and hawks were more respected, rats and mice would not be the scourge they are; and methinks the damage they do is ten times that of all these enemies put together.

Market Weston, Thetford, 1903. EDMUND THOS. DAUBENY.

The Rabbit.—The other day a friend told me that he had once come across a rabbit which was swimming in the sea some distance from the shore. Is this not very unusual? R. C. LOWTHER.

Pole-cats and Stoats.—Thanks to Mr. Daubeny for his reference to pole-cats in January NATURE NOTES. I have had sent to me by a keeper near here a white jill stoat, 15½ in. from the tip of the nose to the end of the tail. It is pure white except the end of the tail, which remains black, and some markings the correct colour on the head. I conclude this is the winter coat. I should like to know how this transformation takes place; has the lady shed her coat, or did the hairs change colour; and why some turn white while others do not?

Rhyl. F. L. RAWLINS.

Moles.—Last month we had heavy floods in the Vale of Conway; one day I saw a mole swim ashore, and judging by appearances he must have come a good way. F. L. RAWLINS.

The Mole.—A fortnight ago, during that short spell of severe weather, I was an interested spectator of the operations of a mole. The ground at the time was frozen very hard, yet in spite of that there was this energetic little creature working underneath the surface, and with spasmodic jerks slowly lifting up a small mountain of soft earth. How so small a creature could have the strength to force up the soil through the hard surface is more than I can explain. Is it possible that the warmth from its body was sufficient to keep the earth above in a soft condition? I did not see the commencement of the building-up operation, but the little hillock had almost reached its normal size when I discovered it.

Buckhurst Hill, JOHN HORNE.
January 29, 1903.

Polydactylous Cats.—I am a reader of your interesting periodical, and shall be obliged by your kindly inserting the following enquiry (if suitable): Is there a breed of cats which possess six toes (*i.e.*, five toes, and a kind of thumb), each armed with strong claws? In the village of Hathersage (Peak District, Derbyshire), a woman has two large cats, half-sisters, one a tortoiseshell, the other light tan, with feet as described. I have never before seen such, and suppose they must belong to a particular breed. I am told that wild cats are still to be found in the woods which clothe the moors (in sheltered depressions), and other small wild animals nearly extinct in England. Are the above any relation to wild cats?

Hathersage, ELIZABETH HOPKINS.
January, 1903.

Winter Hoards.—Many of your readers will have noticed the collections of skins and seeds of "hips" in convenient places in the hedgerows during the last few weeks, in crevices made by plashing, and in last season's nests, the situations being all well chosen and adaptable for a comfortable meal. Now that

the hedges are leafless and the little hoards exposed, naturalists are sure to have noticed them, and I should like to know whether it is the birds or field mice, &c., that take their winter meals in this way.

January 30, 1903. R. M. SKIPWORTH.

Feeding and Nesting-boxes.—My sheltered feeding boxes have been much frequented through the late frosts, but one is freely visited by mice too, as it stands on a small table under a yew tree. Last year I saw a large brown rat go into it in broad daylight, a proceeding I promptly discouraged with the aid of my brother and his gun.

Last season my nesting-boxes were freely used by the great and blue tits, and two old kettles were utilised by robins within a few days of my placing them in trees for the purpose: also a large water can and a "corned-beef" tin, and the tenants became quite accustomed to my daily visits to their "rusty retreats."

R. M. SKIPWORTH.

Co-operative Housekeeping.—On April 19, 1902, I found a blackbird's nest containing four thrush's eggs and saw the thrush leave the nest; two days later I found two blackbird's eggs in it as well and saw a blackbird leave the nest. I then took one of the thrush's eggs away and the blackbird did the duties of hatching and feeding until three well-grown young thrushes and one blackbird left the nest: the second blackbird hatched later and died.

Drowby Mount, R. M. SKIPWORTH.
Searby, Lincoln.

Abnormal Appearances of the Pied Wagtail (*Motacilla Yarrelli*).—In 1898-9 I had repeated appearances of one of the above here. It apparently remained in the adjoining wood and came out of it to the turnip fields on various occasions; but it seemed more remarkable when moving about the farmyard. In fact, it was when pursuing into the stable and cattle houses after food that it made the strongest impressions upon me. It had been pretty well tried and ventured to the farm steading in a very bedraggled state, the feathers being all wet and causing some inconvenience in flight.

Its place of usual abode during this unusual sojourn being a wood consisting of a variety of growing trees, there would have been a variation of food available, as there are always some representation of insects, larvæ, worms, or small mollusca, which are all classed as its food, to be had in a situation of that kind. The bird was a male and floated in the air most beautifully when flying to the turnip field, where it employed itself in searching for food in parts where the operation of lifting the turnips was in progress.

This season, again, on November 18, 1902, another made its appearance near a field where potatoes were in course of being lifted. I have no doubt the object would have been the search of food on the potato ground. I have not seen it since, but it may still be in this locality. It was also a male.

I have seen a stray bird at lower levels than this in other winters, and it seems to me to be of interest to know more about these abnormal appearances of this interesting bird. It is always males which I have seen.

Hillocks of Terpersie, W. WILSON.
By Alford, Aberdeenshire.

Sparrows.—There was a time when I defended the ubiquitous sparrow as being an amusing bird and only moderately harmful, but my feeling has changed into one of hostility, and reluctantly I have begun to wage war on the prolific tribe. The *casus belli* is as follows: My gardener takes me into the orchard and shows me the buds of the apple and pear trees all pecked away, with many lying on the ground. He tells me the currant bushes are just as bad, that I shall have no fruit this year, and that for this I have chiefly, if not exclusively, to thank the sparrows. I put out sopped bread on the lawn for the thrushes, robins and other birds of song, but at once the sparrows swoop down in their dozens and devour it all. Before long their slovenly nests will once more appear on the stack-pipes all round my house—in spite of perforated zinc guards—destined to choke the pipes in heavy rain. Worst of all, when our welcome friends, the

swallows, return they will not be allowed to build and rear their broods in peace, and they will find their former nests already appropriated by these pests.

There appears to be only one way in which they may be reduced in number and also benefit mankind; for I fear that neither grand ladies nor maid-servants would be persuaded to have them stuffed and to stick them in their hats. When I shot a few lately I was told that they made capital pies, and probably they could be cooked in other attractive ways, and might save the poor larks—a thing much to be wished. It is only necessary to invent a French name for the delicacy, and let it appear on the *menu* at fashionable and public dinners, and the thing is done. Even though, unlike the historical "four-and-twenty blackbirds" they are incapable of beginning to warble after grace has been said and the top crust removed, yet the culinary art may make sparrow pie also a "dainty dish to set before the king." Then, and not till then, we shall see them rapidly diminish.

Fern Bank, Buxted. A. L. HUSSEY.
February 2, 1903.

Woodpeckers.—The increase in the number of green woodpeckers the last year or two is so marked as to arrest the attention of persons not usually observant in such matters. The absence of long, severe frosts, and the respect for bird life that is gradually gaining ground, probably account for this. By their numbers these birds aid in protecting the great black woodpecker which occurs in this locality, and resembles them not only in their ways but also in its flight and in some of its notes. This resemblance is close enough to deceive many, though the trained naturalist would detect the difference at once. Greater and lesser spotted woodpeckers are frequently to be seen and heard throughout this neighbourhood, which is probably the only one in Britain that can boast of producing at the present time four kinds of this beautiful and interesting class of birds.

Market Weston, Thetford, EDMUND THOS. DAUBENY.
January, 1903.

Diving Birds.—Do all birds use their wings to propel themselves under water? Do some use their wings only, others their legs only? A wild duck when diving does not fully extend the wing as in flight, but urges itself along with slow strokes of half-extended pinions, the legs being stretched out and not employed. Dabchicks when diving look more like water-rats than birds, and seem to use their feet and not their wings. But I have not been able to decide the point in their case.

February 7, 1903. EDMUND THOS. DAUBENY.

Kestrel.—A young friend lately wrote me that he saw a kestrel dash into a flock of starlings, kill one, bite off the head, and fly away with it. Can any of your readers tell me if the head is a tit-bit with kestrels?

F. B. DOVETON.

Marsh-Tit.—We have marsh-tits in our garden here, but they *never* attack the suspended cocoa-nut shells, as do the great cole and blue tits. Why is this? Nor do the long-tailed tits come.

F. B. DOVETON.

White's Thrush.—I have seen a *White's Thrush* in our garden two Novembers running here, and other observers have seen the bird, they tell me here, and in other parts of England, at the same season.

Karsfield, Torquay. F. B. DOVETON.

Gnats.—Amongst other insects I have sometimes wondered what became of gnats (or mosquitoes as they are now more popularly called) on the disappearance of warm sunny days and the approach of cold weather. As I have lately discovered their winter quarters, it is no longer to me an unsolved problem. On the wall of the darkest part of my coal-cellar there are now to be seen thousands of these little insects which have evidently come there to stay for the winter, and are doubtless waiting for the return of warmer weather and longer days to emerge forth and make their presence seen and felt again. As there is no reason to suppose that my house has been selected from all others, there is no doubt what-

ever that many other houses are also harbouring large numbers of these irritating little insects; but as they evidently prefer the darkest part of the house they are probably seldom seen.

Buckhurst Hill, JOHN HORNE.
January 29, 1903.

Earwigs.—Mr. Elliott points out that it is inaccurate to call earwigs beetles. Kirby and Spence put them "next" to the beetles; but authorities seem to differ as to where they should come in. Some call them Dermaptera, others Euplexoptera (beautifully folded wings). I have seen these insects fold their wings late in the evening or at night, and amongst other places when on a flower-pot in my greenhouse. The name "earwig" is merely a corruption of "ear-wing;" the general form of the wing, when fully extended, being very much that of the human ear.

EDMUND THOS. DAUBENY.

The Cinnabar Moth.—Last summer whilst going along a road in Witherslack, Westmorland, I saw a very large flock of crows rise from off the fellside. I guessed that they were after the Cinnabar larvæ, which I knew swarmed there every year. And this was the case. The ground was quite alive with the orange and black caterpillars, while quite a forest of bare ragwort plants (or "Stinking Willie" as the country folk call it), grew around. I had never seen so large a gathering of crows there before, and considering the number of caterpillars which they must destroy, it is wonderful that the insect is so abundant every year.

R. C. LOWTHER.

The Nut-tree Tussock.—Is it true that an insect is no longer able to fly if its antennæ have been injured? In 1901 I found a nut-tree tussock moth (*Dasychira coryli*) on a Cheltenham pavement. It had only one antenna, but was otherwise very fresh. I tried to make it fly but without success.

48, *George Square, Edinburgh.* R. C. LOWTHER.
February 8, 1903.

Eoliths.—I am afraid your correspondent, "F. G. S.," has raised points to which it is impossible to reply definitely. I should, however, like to offer a few remarks on the latter part of his note which has special reference to the plateau-drift. The information he desires seems to fall into three heads, and I have therefore divided them as under:—

(1) Evidence as to the greater antiquity of the plateau beds, without reference to the implements.

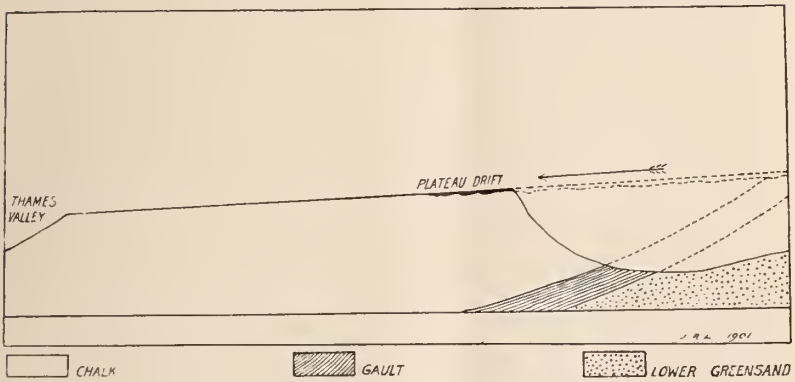
(2) The indications of a connection with a former physical geography.

(3) The method by which the beds have attained their present positions.

With regard to point No. 1, it is impossible to give the evidence for the greater antiquity of the beds without including the implements, also because the latter often form an integral part of the deposits, very much the same as the drift implements are found in the low level gravels. Perhaps the strongest evidence for the antiquity of the plateau-drift is its altitude when considered in connection with the gravels in the valleys. It is significant that the former gravels are only found on the highest ground, namely, the summit of the North Downs, 760 feet, and at Well Hill, Kent, where there is an elevation of ground reaching the 600 feet level, O.D. On this summit I found Eoliths no longer ago than last Saturday, but descending to the lower levels the characteristic ochreous flints were entirely absent except for a few scattered specimens evidently belonging to the higher ground. Well Hill is some distance north of the Downs, and its summit therefore must be a remnant of the high land originally extending from the Downs, before the excavation of the valleys now intervening. The ground from the summit of the Downs, 766 feet at Terry's Lodge, makes a gradual descent to the Thames, and the plateau-drift occupies a narrow strip of high land following in contour the chalk escarpment. On its northern edge the plateau-drift is cut into by many small valleys, and in these valleys Mr. Harrison has found Palæolithic implements to the exclusion of Eoliths, and on the high ground between the valleys Eoliths to the exclusion of Palæoliths. The plateau-drift now

forming the highest ground in the district really represents the lower levels at the time of the deposition of the bed; they thus speak for that antiquity which so vastly antedates the lower gravels of the valleys.

Point No. 2: This again is a question the answer to which is curtailed by space, but the materials found in the plateau beds offer some evidence as to the physical geography to which they owe their being. Mixed with the flints are pieces of greensand which must have come from the greensand outcrop to the south of the Downs before the present valleys were excavated. The same remark also applies to the fragmentary gault fossils found by my friends, Messrs. Harrison



SECTION SHOWING SOURCE OF PLATEAU-DRIFT.

and Kennard, on the North Downs at an altitude of 760 feet above sea level.

send a section of the North Downs showing the dip of the Secondary rocks, and it will, I think, be of use in illustrating the first position of the greensand fragments before they were detached from their beds and swept down the slope to the places they now occupy. This, then, constitutes one point of the evidence for the former physical geography which the writer asks for.

As to point No. 3, its answer is foreshadowed by the foregoing remarks. There are, it is true, some stones marked with scratches which have been adduced as argument against the pre-glacial date of the deposit, but at the same time *all* the flints show signs of roiling not distinguishable in effect from the low level gravels. That the worked flints have been subjected to rolling after the period of their artificial shaping does not admit of doubt. The flints showing striæ bear only a small proportion to the number contained in the beds, a point of some importance when it is remarked that nearly all of them, both worked and unworked, show imperfect conchoidal fractures. If the surface of an Eolith is carefully examined with a glass the more exposed portions will be seen to bear these characteristic marks of water action. Again an implement from the low level gravels shows a surface in some cases entirely covered with the fractures, and a further illustration may be made from the flinty shore pebbles, where the fractures are so numerous that they conceal the structure of the pebbles. It is therefore fairly evident that the agency which caused the fractures on the shore pebbles also produced those on the low level and plateau gravels, namely, the action of running or agitated water. The smaller fractures on the Eoliths seem to suggest less velocity, and therefore less transporting power in the stream which deposited the material, and this is quite in accordance with the composition of the clay matrix in which Eoliths are found. Patches of clay are not often seen in the valley gravels, the greater velocity of the stream, as evidenced by the larger fractures on the flints, probably being sufficient to account for the absence of such material. It had not, however, sufficient transporting power to still hold in suspension the innumerable small flints packed between the larger stones.

I may perhaps be allowed to disclose a desire to know what is meant by your

correspondent's phrase "the so-called" Eoliths? He will, I trust, pardon me if I express the hope that the phrase means nothing heretical in connection with these important and interesting remains of man's early occupation of the land?

February 9, 1903. J. RUSSELL LARKLY.

Silica in Sea-water.—In the article on "Sea-water" it is said that "the very minute traces of silica present in sea-water is somewhat puzzling," meaning I presume from the context, that not only is the quantity of calcium carbonate small compared to the vast amount required for the supply of lime to corals and shell-fish, but that it is a puzzle whence the silica required by sponges and other silica-using organisms is derived. It must be remembered that sea-water contains everything soluble that rivers carry down to it, and that hence probably every one of the chemical elements could be found in it. We know, for instance, that sea-water contains silver, and that iodine and bromine have accumulated in sea-water to such an extent that it is the principal industrial source of these now important elements. With the exception of the sea-salts carried over the land by spray-laden wind in quantity far larger than is generally thought, these mostly accumulate in the ocean, to be restored to the land perhaps countless ages afterwards in the form of chalk cliffs, &c. The chalk thus deposited countless ages ago is now being gradually dissolved by rain-water and carried out by the rivers to sea along with other soluble constituents of the soil, to become again absorbed by the vast population of shelled sea-animals. Thus goes on the endless change in the world.

Rivers, such as the Thames, flowing through a somewhat calcareous country, carry out to sea large quantities of calcium carbonate, as much as twenty grains in each gallon, besides half a grain of silica also in solution. Apparently insoluble silicates (even those of glass) are slightly soluble in water, specially if its action be aided by carbonic acid; so, rivers draining a geological formation rich in silicates, especially those of crystalline rocks such as basalt, trap, or gneiss, carry down a much larger proportion of silica with a less proportion of calcium carbonate.

Many years ago, when Analyst of Water in India, I made a very full study of the water of the Mahanuddy (*mahà nadi*, great river) which drains part of the Central Provinces, and falls into the Bay of Bengal near Cuttack. Without going into the details of analysis I may say that the water of this river contained in solution six grains of mineral solids to the gallon; of these over two grains were silica, either in combination or in the free state as silicic hydrate.

From the data supplied me by the Irrigation Engineers' department I calculated that this river, when in full flood, might carry down to the sea daily, among other soluble minerals, 1,000 tons of potash nitre, 1,000 tons of bone phosphate (besides 2,000 tons more in the suspended silt), 30,000 tons of silica in solution, and about the same quantity of calcium carbonate. There is plenty of material for the bones and shells of marine animals, and these take it so freely that all along the coasts of India lime is always obtained by burning cockle shells dredged from lagoons or from shallow places near the shore.

EDWARD NICHOLSON,

1, *Huskisson Street, Liverpool.* *Surgeon Lt.-Colonel, A.M.S.*

The Fall of Stones from the Sky.—It can hardly be expected that any authority on meteorites will trouble himself to reply to the amusing contribution Mr. Hastie has made to the light literature of astronomy. Though Mr. Hastie has had much of the field to himself, I really hope that none of your readers will conclude that his objections to the fall of meteorites possess any weight whatever, or that there is the slightest foundation in fact for the peculiar views he has so confidently expressed. More than a generation ago John Hampden pertinaciously maintained his flat-earth theory, and denounced in his dogmatic style all those who ventured to differ from him. Argument and experiment alike failed to shake his deep-rooted convictions. Mr. Hampden was doubtless perfectly honest though sadly erroneous in his beliefs. And Mr. Hastie is equally sincere, though just as grievously mistaken, in his opposition to the fact that stones have fallen from the sky to the earth. No one who sifts the evidence and is capable of forming a just conception from observed and well attested facts can doubt for

a moment that many bodies, some of stone (aërolites), some of iron (siderites), and some of an admixture of stone and iron (siderolites) have descended to the ground at various times and in various places.

The history of stone and iron falls is much as follows. Loud detonations are suddenly heard, the startled listeners have quickly glanced above and around to ascertain the cause, when they have immediately seen a body descend rapidly to the earth. They have run to the spot and found a hole from which soon afterwards they have extracted a stone while hot or warm, which has had a singular appearance and has been utterly dissimilar in its composition and state to any other stones in the same locality. The chain of evidence has thus been complete, and it has been furnished to us again and again. The very same incident will recur in the years of the future, for the facts of nature, like the facts of history, are apt to repeat themselves.

I cannot take up your valued space with a lengthy reference to facts, but with your very kind permission will just refer to one or two statements made by Mr. Hastie. He says he does "not believe that there is any properly substantiated proof of a single case to be found of any stone having ever been seen to fall from the sky." Now let us take as examples the two most recent cases of stone falls which have occurred in the United Kingdom.

Crumlin, September 13, 1902 : Three men were guided to the spot, about twenty yards distant, where the stone fell by seeing something going into the ground with lightning speed and the soil thrown up a considerable distance into the air. Amongst standing corn a hole was at once discovered and a hot stone of special kind was dug out soon afterwards.

Middlesbrough, March 14, 1881 : The fall was witnessed by an inspector and three platelayers working forty-eight yards distant from the railway siding where it occurred, and less than twenty yards from a signal box in which the pointsman and one of the platelayers were conversing. The latter thought that a stone had been thrown at the building by his companions outside. Going to the spot the men found a nearly vertical hole, and at a depth of eleven inches a stone quite warm and of very abnormal character was discovered.

Instances of very similar kind might be greatly multiplied, but it seems quite unnecessary to make a lot of quotations. If a man will contradict one thoroughly well-attested case he may just as well contradict them all.

Your correspondent remarks that "there was a stone underneath the Crumlin stone that was extracted, but I think it will probably be found that the underneath stone is a part of the same stone of which the fragment in the museum is a portion." For weakness of argument it would be very hard to beat this! As though the stone underlying the meteorite had not been thoroughly examined and found a different object altogether, as though the hole had not been further excavated and its contents overhauled with critical eyes, and as though the whole neighbourhood had not been explored for other traces of fallen fragments! But one stone only, of black colour and extra-terrestrial composition was found, and it had nothing whatever to do with the ordinary field stones lying near, and naturally so, since it had but recently made its incursion from planetary space.

Mr. Hastie regards it as a remarkable circumstance that meteoric stones do not fall upon houses or streets. But the palpable explanation is that these incidents are comparatively rare, and that the area of our towns and roads hardly covers, I should say, one thousandth part of the entire country. It is therefore obvious that, consistently with the law of probabilities, the descent of such bodies should almost invariably take place on the fields or similar places. It is scarcely to be supposed that planetary objects, obeying the immutable laws of Nature, are in a position to select suitable sites for their resting places! Does Mr. Hastie require that a meteorite should fall at his feet in Hampstead? He would be sceptical perhaps, even then!

Let your correspondent obtain a closer acquaintance with this interesting subject and study the evidence without bias or preconceived ideas, if he can. Further knowledge may well induce him to modify his present opinions. In any case his opposition to well-established facts and legitimate deductions drawn from them can avail him nothing, for the truth must prevail. In one respect his communications have done a positive good in directing attention to a very attractive branch of astronomy.

The conclusion to which scientific men arrived a long time since in their search after the truth (loving it as they do for its own sake), that meteorites can and do fall upon the earth, is incontrovertible, and almost every year adds weight to the evidence demonstrating it.

St. Paul's Day, 1903. AN OBSERVER OF NATURE.

Mr. Hastie, in essaying to speak upon comets and meteors, appears to be singularly unfortunate in making flagrant errors in almost every sentence.

He says that a dense shower of shooting stars occurred on November 27, 1872, but that "they had not been seen until the comet had failed to perform his accustomed journey." But there were brilliant and abundant showers of these meteors in 1798 and 1832. Your correspondent further says that "a comet's tail is invariably turned exactly in an opposite direction from the sun." But the tails of comets are pretty often *not* turned precisely away from the sun—in fact, tails have been observed which were *directed towards the sun!* He further says that "we only see shooting stars at night. If we could see them in the day time we should certainly see them with tails." But meteors are pretty often seen in full sunshine! I may just mention a few recent dates of such observations: January 9, May 31, September 2, 1900; January 6, 1901; and April 10 and June 28, 1902.

Mr. Hastie's statement that "meteors are always luminous but invisible on account of their smallness," is also quite erroneous. It is perfectly evident that Mr. Hastie is unacquainted with even the rudiments of meteoric and cometary astronomy!

The Meteor of January 14.—I am quite incapable of taking a part in the discussion on the origin of meteorites; but, on one theory at least, meteors are probably their near relations. A bright meteor was seen from more than one part of England about 7.7 p.m. on January 14. An observer near Chesterfield, Derbyshire, saw it to the south of him. I myself, about two miles south-east from Maidstone (and so about two degrees south of Chesterfield) saw it between 7 and 7.15 p.m. to the north of me. I have not heard of its being seen by any one else in this district, or further south; but from the identity of the time, and of the apparent course of the meteor, I do not doubt that the same object was seen in Derbyshire and in Kent. It has been thought that it appeared over the North Sea, off Yarmouth, and continued its bright course as far as North Oxfordshire.

Otham Parsonage, Maidstone. F. M. MILLARD.

A True Picture.—"On one of the lower of the branches, but high enough to be beyond arm's reach, or even cane's reach, in the crook of the bough, crouched, making ready to spring, a big black cat, the tip of his tail twitching with contained excitement, his yellow eyes fixed murderously on the branch next above, where, in the agitation of supreme distress, a chaffinch—a little grey hen chaffinch—was hopping backwards and forwards, sometimes rising a few inches into the air, but always returning to the branch, and uttering a succession of terrified, agonised, despairing tweets.

"It was a hateful thing to see. It was the genius of cruelty made manifest in a single intense tableau. 'Why doesn't the bird fly away?' Susanna painfully questioned. She was pale and her lips were strained: she looked sick and hopeless. 'Is she fascinated? The cat will surely get her.'

"'No—her nest must be somewhere there—she is guarding her nestlings,' said Anthony.

"Then he raised his stick menacingly, and in tones of stern command, addressed the cat.

"'Patapouf! I am ashamed of you. Come down—come down from there—come down directly.' And he emphasised each staccato summons by a sharp rap of his stick against the highest point of the tree that he could reach.

"The cat turned his head, to look—and the spell was broken. His attitude relaxed. Anthony put his hands on the tree, and made as if to climb it. The cat gave a resigned shrug of the shoulders, and came scrambling down. Next instant (if you please), unabashed, tail erect, back arched, he was rubbing his

whiskers against Anthony's legs, circling round them, s-shaping himself between them, and purring conciliations, as who should say, 'There, there. Though you *have* spoiled sport, I won't quarrel with you, and I *am* delighted to see you.' The bird, twittering, flew up, and disappeared in the higher foliage."—From "The Lady Paramount," by Henry Harland.

SELBORNE SOCIETY NOTICES.

Council Meeting.—The usual monthly meeting of the Council will be held at 20, Hanover Square, W., on Wednesday, March 11, at 5.30 p.m.

New Members.—A. B. Wynne, Esq., Veyteux; Norwood Nat. Sc. Scy. (per. B. H. Winlow, Esq.); Dr. Cameron Gillies, Hampstead; Mrs. Matthew Hunt, Croydon; Geo. Dolman, Esq., Hampstead; Edmond Thompson, Esq., Hampstead; H. R. Appleton, Esq., Hampstead; Mrs. Dolphin, Shrewsbury; and Miss Violet Burke, Broadstairs.

Donations and Subscriptions.—The Council beg to acknowledge the following Donations: Mrs. Arthur Hill, £5 5s.; Mrs. Band, 2s.; and the following Subscriptions over 5s.: H. J. Eveleigh, Esq., 10s.; Mrs. Lowther, 20s.; Rev. J. E. Hall, 10s.; Hugh Scott, Esq., 10s.; Mrs. Kempson, 10s.; W. C. Stapleden, Esq., 21s.; Rev. A. L. Hussey, 21s.; Alf. Culshaw, Esq., 7s. 6d.; Mrs. Eden, 10s. 6d.; H. Harpur Crewe, Esq., 12s. 6d.; Miss Garrett, 21s.; Mrs. M. A. Marshall, 10s. 6d.; Mrs. Minet, 20s.; Mrs. M. L. Cooke-Yarborough, 10s.

SELBORNE SATURDAY AFTERNOONS.

Some forty Selbornians assembled at St. John's Church, Clerkenwell, on January 31. They were very courteously received by the Rector, the Rev. T. W. Wood, who delivered a short address on the history of the Knights of St. John of Jerusalem and of the Priory Church of the English Branch of the Order before showing his visitors over the place and the crypt beneath. All the interesting facts in connection with the foundation cannot be gone into here, but full details, with illustrations, will be found in the excellent guide by the Rector and Mr. Henry W. Fincham (Phillips, 121, Fleet Street, E.C.). The crypt is certainly one of the most interesting bits of old London, which no Londoner should miss seeing. The original nave of the church was round, which fact was only discovered in 1900. Among the bodies found in the crypt was that of Fanny Kemp, the heroine of the Cock Lane Ghost imposture, which like many another supernatural cheat was firmly believed in by those who ought to have known better. No less than 325 bodies had been deposited in the crypt, but so offensive did they become that the Rev. T. W. Wood very sensibly took steps to have them removed to Brookwood, notwithstanding the clamour and noise of irresponsible newspaper correspondents, who had perhaps never been near the place. But "*Gegen die Dummheit Kämpfen die Götter selbst vergebens.*" The Selbornians then visited the interior of St. John's Gate, now the headquarters of the revived Order of St. John of Jerusalem, whose ambulance work is well known to all. Here Dr. Johnson worked up parliamentary reports for Cave's *Gentleman's Magazine*.

"Slow rises worth by poverty depress'd."

February 14.—Between twenty and thirty Selbornians assembled in the Botanical Galleries of the Natural History Museum, where Dr. Rendle met them. Before proceeding into the Herbarium Department Dr. Rendle briefly pointed out the objects of interest in some of the lower orders of plants, such as the mycetozoa, the mosses, lichens, lycopodiums, models

of fungi, and cycads, which were exhibited in the wall cases. Perhaps the most interesting object was the specimen of the fossilised seaweed, *Caulerpa Carruthersii*, a small species that had left its mark in a block of stone. In the Herbarium Department, Dr. Rendle showed how the countless specimens of plants that reached the Museum from all parts of the globe were examined, catalogued, and labelled, and then secured in neat cupboards. Drawers full of the cones of various coniferæ and cycads were pulled out for examination, and one specimen that excited a good deal of interest was the fruit of the Doum palm that is to the Soudanese what the cocoanut is to the South Sea Islander. The library was greatly appreciated. The collections of Sir Hans Sloane that were the nucleus of the present botanical collection were examined with great interest. Some ancient herbals were exhibited, among others being the "New Herbal" of Turner, who might be reputed our first English Herbalist. Gerard and Parkinson were also there, and Curtis's "Botanical Magazine," together with a volume of superb paintings of flowers by the two brothers Bauer. Many expressions of thanks were made to Dr. Rendle for his interesting remarks and for his kindness in receiving the Selbornians and taking them over a part not generally available to the public.

FORTHCOMING SELBORNE SATURDAY AFTERNOONS.

March 14.—**Natural History Museum, Cromwell Road, S.W.**—Meet Mrs. Percy Myles in the Central Hall, 2 to 2.15. Dr. A. Smith Woodward, F.R.S., has kindly undertaken to give a demonstration on the Gallery of Whales.

Saturday, March 28.—By kind permission of Lord Brassey, Selbornians will be permitted to visit his Museum at 24, Park Lane, on this date. Assemble *outside* 24, Park Lane to meet Mrs. Percy Myles, from 2.15 to 2.30.

ANSWERS TO CORRESPONDENTS.

E. J. Langton.—C. E. Maurice, Eirene Cottage, Gainsborough Gardens, Hampstead.

NOTICES TO CORRESPONDENTS.

1. All communications for NATURE NOTES must be authenticated with name and address, not necessarily for publication.

2. The return of an unaccepted contribution can only be guaranteed when it is accompanied by a stamped and addressed envelope. We cannot undertake to name specimens privately, to return them, or to reply to questions by letter.

3. All communications for any number must be in the Editor's hands by the 10th of the preceding month.

4. Communications for NATURE NOTES, books for review, specimens for naming, &c., should be addressed to the Editor, PROFESSOR BOULGER, F.L.S., F.G.S., 11, Onslow Road, Richmond, Surrey.

5. For the supply of the Magazine to others than members address the publishers, Messrs. JOHN BALE, SONS AND DANIELSSON, Ltd., 83-89, Great Titchfield Street, London, W.

6. Letters connected with the business of the Society, subscriptions, &c., should be addressed to the Secretary, Mr. R. MARSHMAN WATTSON, 20, Hanover Square, W.

Nature Notes:

The Selborne Society's Magazine.

No. 160. APRIL, 1903. Vol. XIV.

OBJECTS OF THE SOCIETY.

To preserve from unnecessary destruction such wild birds, animals and plants as are harmless, beautiful, or rare. To discourage the wearing and use for ornament of birds and their plumage, except when the birds are killed for food or reared for their plumage. To protect places and objects of antiquarian interest or natural beauty from ill-treatment or destruction. To promote the study of natural history.

SELBORNIANA.

Annual Meeting and Conversazione.—Tuesday, May 5, has been fixed as the date of the Annual Meeting and Conversazione, when the President, the Right Hon. Lord Avebury, D.C.L., F.R.S., will occupy the chair.

The arrangements will be in the hands of a special committee, consisting of Mrs. P. Myles, Professor G. S. Boulger, F.L.S., F.G.S., Mr. Hedger Wallace, F.Z.S., Mr. W. M. Webb, F.L.S., Mr. G. Avenell, Mr. R. M. Wattson, and Mr. E. A. Martin, F.G.S. (Hon. Sec. to Committee).

The loan of suitable objects for exhibition is desired, and offers should be made to any member of the Committee. Any of the following will be especially acceptable: *Personalia* of Gilbert White, nature-study objects and photographs, vivaria and terraria, insect breeding-cages, productions of kindred societies, objects illustrative of economic botany, photographs of places of interest or natural beauty, nature-trimmed birdless hats and bonnets, and natural history objects generally.

Tickets will be ready in due course, and can then be obtained, on application, of the local Hon. Secs., or in the case of

members unattached to Branches, of the Secretary, 20, Hanover Square, W. A stamped addressed envelope (not small) should accompany each application.

Recent Publications of the Society.—The attention of members is directed to the recent issue of a revised leaflet addressed to boys and girls on gathering wild flowers. Copies may be had of the Secretary, 20, Hanover Square, W., at 9d. per 100 post free. The Society, having as one of its objects "the protection of places and objects of antiquarian interest," has also issued a small but most useful chart, compiled by the Secretary, showing the dates and the styles and periods of English Gothic Architecture, with the varying nomenclature of Rickman, Sharpe and other authorities. Single copies of this may be had at a 1d., if a stamped addressed envelope be enclosed, or 20 copies post free for 1s., 50 for 2s., or 100 for 3s.

Visit to Selborne.—The visit to Selborne is definitely fixed for June 13, under the guidance of Dr. Bowdler Sharpe. It will be of great importance to ascertain the number of those likely to join this ramble; and for this purpose the names must be sent in to Mrs. Percy Myles, 7, Lincoln Street, S.W., by April 30. It will be a whole day excursion; and dinner and tea will have to be arranged for, beside a six-mile drive to and from the station to Selborne. The estimated expense will be from 15s. to £1. Any member of the Selborne Society is eligible to attend the ramble.

The Protection of Devonshire Plants.—The following appeared in *The Standard* for February 25:—

> Efforts are being made in Devonshire to put a stop to the wholesale spoliation of the hedgerows by fern and flower gatherers. There are men who make a business of plucking up primroses by the roots, and sending them to Covent Garden and the Midlands. So systematic are these spoilers that they leave some of the hedgerows almost as bare as if they had been visited by locusts. In fining William Johnstone, fern and flower gatherer, London, £2 and £1 costs, for digging up primrose roots belonging to Sir Edmund de la Pole, the Colyton Magistrates said any others who came before them for this offence would be sent to prison without the option of a fine.

From *The Exeter Gazette* of February 21, it appears that the actual charge was "malicious damage to the property of Sir Edmund de la Pole by digging up primrose roots." This is a point of some importance in view of the fact that magistrates elsewhere have doubted as to their power to convict for mere removal of wild plants.

A Lost Charm at Selborne.—We are very sorry to hear that one of the old thatched cottages that formed one of the great charms of Gilbert White's village has been set on fire by lightning and destroyed.

A NEGLECTED VILLAGE.

SELBORNE possesses so great an attraction for members of the Selborne Society and for others who, although not members of the Society, yet are lovers of Gilbert White, that I fear the neighbouring village of Faringdon is not visited so frequently as its importance in the history of the naturalist justifies.

When White speaks of the chalk pit at the north-west end of the Hanger in which *nautili* were frequent, he had no doubt had many opportunities of searching in the pit, or conversing with the quarrymen as to their various finds therein, in the course of his constant journeys to and from Faringdon.

All White's printed letters which bear a date were written between 1767 and 1787. He was appointed curate at Faringdon in 1762, and resigned the curacy on accepting a similar post at Selborne in 1784, this being the same year in which the Rev. Christopher Taylor was inducted into the vicarage of Selborne. The last letter only is dated subsequently to White's transfer to Selborne, and this is probably not a genuine letter. We may therefore conclude that all the letters which were printed in the book were actually written while he was curate of Faringdon; and yet White is strangely silent regarding the village. It apparently possessed but little of White's esteem. Selborne was his pole-star. Faringdon, however, is occasionally mentioned, but one can scarcely comprehend his silence in regard to the village in which he ministered as curate for no less than twenty-two years.

Faringdon vicarage is picturesque in many respects. The cottages are more scattered even than those in Selborne, and many of them have thatched roofs. The church appears to be but a portion of what it was at one time. It is as though the south aisle had been completely removed and the present wall with pointed windows built up where were formerly circular columns supporting semi-circular Norman arches, as are still to be seen on the north side. At the time of my visit the steeple was undergoing repair; otherwise the church appears to be well preserved. But the general effect on entering the church is not pleasing. There is rude magnificence about the columns, the arches, and the huge beams which stretch across and support the roof. But the walls have been painted a bluish-pink, and the roof is hidden by a ceiling, which is also painted the same hideous colour. The chancel has been rebuilt, and is quite out of keeping with the rest of the fabric. It is highly decorated from top to bottom with stencil patterns, and this meretricious ornament draws attention from the really beautiful paintings, executed, it is understood, by the rector's wife, which grace the many-patterned marbles of which the reredos is constructed. But think of a reredos in so antique a structure!

One relic of antiquity remains, and this should be jealously guarded. It is the identical pulpit from which Gilbert White delivered his sermons. It is considerably grub-eaten, and may well be considered genuine.

The floor around the reredos is laid with encaustic tiles, and as some of them are identical with those which are dug up in the garden ground of the Priory Farm near Selborne, it is highly probable that they were transported thence when the chancel was rebuilt. Similar tiles have been laid in Selborne Church at the west side of the south aisle. The chancel at Faringdon retains a piscina and an aumbry, whilst immediately on entering the church there is evidence on the right of the former existence of a holy-water stoup. In the churchyard is a very fine yew tree, and the trunk is strangely divided into a number of independent stems, these being isolated by the decomposition of the internal woody tissue.

Faringdon is well worth a visit when next Selborne claims our members as worshippers at the Gilbertian shrine.

EDWARD A. MARTIN.

GILBERT WHITE AND LEPROSY.

READERS of White's delightful "Natural History of Selborne" are no doubt familiar with the case of a pauper, which is described in Letter XXXVII. (Barrington Series) as follows: "There was in this village several years ago a miserable pauper, who from his birth was afflicted with a leprosy, as far as we are aware, of a singular kind, since it affected only the palms of his hands and the soles of his feet. This scaly eruption usually broke out twice in the year —at the spring and fall—and by peeling away, left the skin so thin and tender that neither his hands nor feet were able to perform their functions, so that the poor object was half his time on crutches, incapable of employment, and languishing in a tiresome state of indolence and inactivity. His habit was lean, lank, and cadaverous. In this sad plight he dragged on a miserable existence, a burden to himself and his parish, which was obliged to support him till he was relieved by death at more than 30 years of age. The good women, who love to account for every defect in children by the doctrine of longing, said that his mother felt a great propensity for oysters which she was unable to gratify, and that the black rough scurf on his hands and feet were the shells of that fish. We knew his parents, neither of which were lepers; his father in particular lived to be far advanced in years."

That White meant the true leprosy is made evident by his subsequent remarks on that disease, but which I need not

dwell upon here, as my object in the present note is to call attention to the fact that the case above described was not one of leprosy at all. The condition was really one of keratoma palmare et plantare, which is frequently hereditary. It has nothing whatever to do with leprosy (Elephantiasis of the Greeks and Lepra of the Arabs). Leprous infiltrations of the palms and soles are rare, and limited to these areas quite unheard of. I have dealt with Gilbert White's case in the *British Medical Journal* for January 25, 1902. I have thought it well to bring the matter before the readers of NATURE NOTES in the hope that future editors of "The Natural History of Selborne" will point out in a foot-note that the case was not one of leprosy.

I may perhaps be allowed to take this opportunity of saying a word or two on the subject of the doctrine of longing referred to by White in the above quotation. I can say positively that the miserable pauper's condition was not due to his mother's great propensity for that delicious mollusc, the oyster. White apparently was no believer in the tales of "the good women, who love to account for every defect in children by the doctrine of longing." He was too shrewd an observer, I should say, to accept such statements. As to the "Elephant man" mentioned in the January issue of NATURE NOTES (p. 6), it would require the imagination of a professional showman to see any resemblance between the unfortunate sufferer and an elephant. Indeed, the patient got the name of the "Elephant man" at a penny show where he was exhibited. Whether the tale of his mother having been frightened by an elephant was an afterthought, or the result of the showman's insidious suggestion, I cannot say. All statements of this kind are to be received with caution. Many of them break down under cross-examination. It is a well-known fact that some people go on repeating purely imaginary statements until they begin to believe in them implicitly. This is not the place to go further into the matter, but it is well to bear in mind that "a little knowledge is a dangerous thing."

GEORGE PERNET,
English Editor of *Lepra*, the International Journal devoted to Leprosy.

NATURE IN THE EARLY MONTHS.

PERHAPS of all the twelve in the year the month just past, January, and the first weeks of the present February are the least interesting to the naturalist; and indeed, never did Nature seem to slumber more heavily than when, on a blustering but sunny afternoon in the latter end of the first month of the year, two of us devotees set out to see if this was really so, and whether Nature was such a sluggard as at first sight appeared.

The commencement of our walk led through a cluster of trees, in summer a favourite place for a picnic, but now desolate and silent, save for the chirping of a robin and the hoarse cackle of the blackbird disturbed by our approach. A tree-creeper pursued his spiral course up a lofty elm seeking for some ill-concealed insect, and the blue tits on the bending sprays of an adjoining willow were enjoying themselves heartily, swinging upside down in the wind. Emerging from the trees we noted a flock of field-fares rising up from a spot of recently flooded land in the next meadow, their wings glittering brightly against the dark background of an ivy-covered stump; while to the left a couple of chaffinches quietly slipped over the intervening hedge.

A jump over a dyke and a scramble through the hedge brought us beside a backwater of the river Ouse lined with willows, whose roots extending above the stream were the summer haunt of many a fat chub. Plop! and from under the curved brown rushes a rat, hastily terminating his cleaning operations, slips into the water—a few bubbles alone showing the course taken in a somewhat hasty departure for the welcome refuge afforded by the overhanging bank. Ahead we caught sight of a brace of moorhen fluttering into an island of reeds, which in the not far distant spring was to provide a site for their nest, similar in colour to its bountiful store of eggs, and stealthily hidden by the bending rushes.

A marshy piece of land covered with newly thrown up molehills had now to be crossed, and in doing so we started the very bird one would expect to find here, a snipe, which arose with much fluttering and twirling from the side of the bank, well probed by his long bill, and after many gyrations, swept in a long curve overhead and finally disappeared in the distance. Through a hedge, and we came to a willow holt, noticing how already the sheeny white of the so-called "palm" was appearing, testifying to the recent mildness of the weather. A tree broken by the gales stood in front, and the boughs wrenched away exposed to view a succession of fairly large holes, the winter quarters of some insects, but now rudely devastated by the combined efforts of the elements and the ever hungry tits. We pushed our way among the osiers, occasionally receiving a stinging blow from the resentful green switches, and startling a tiny rabbit, making its first acquaintance with man, which, but for the white bob-tail, might have been mistaken for a rat. The presence of a pile of feathers close by, and the fact that from afar a hawk had been espied hovering near this spot, caused us to wonder if a dark tragedy had been performed here. From the holt we passed by a desolate marshy place, where in severe weather wild duck in plenty may be seen. How utterly dreary this spot looked, as we lingered gazing at the tangled rushes and tufts of brown grass discoloured by flood and with pools of open water, here

and there covered with flotsam and jetsam brought down by a heavy flush, and at the edge the gaunt brown stems of the once stately hemlock standing out in bold relief, bringing back memories of the past summer, while the distant cry of a solitary peewit added to the mournful scene! But yet there was a strange and fascinating beauty about this marsh—a beauty which only those who know and love the fens can truly appreciate. There were no duck here to-day, and turning away, the antics of a number of dabchicks (or divers) attracted our attention, and we watched with some interest while these tiny creatures in a secluded spot by the further bank of the stream bobbed beneath the surface one after the other their fluffy heads, emerging after a few seconds only to disappear instantly; and this, unconscious of our presence, they repeated time after time.

The backwater now joining the river, the rest of our walk led along the tow path in a curve: as we neared home the short winter's afternoon was drawing to a close: the wind having subsided, in the distance the trees were half obscured by a silvery mist; and the surrounding country bore a peaceful, restful aspect in the lingering rays of the sun which it was hard to leave, but which would live long in the memory, and serve to heighten the anticipation of many another ramble and many another attempt to see a little of the life and ways of Nature's vast kingdom.

C. M. H.

THE WOODS IN WINTER; OR A HAPPY NEW YEAR TO THE SQUIRRELS.

NEVER till lately have I been able to visit the woods in winter, except once in my boyhood. I have often tried to picture to myself the condition of my little friends, the squirrels, during the winter months, half asleep in their nests or in sheltering holes, lying beside an ever-wasting hoard of nuts and acorns. As the roads were so rideable towards the end of December I decided to drag my cycle out of its winter quarters and try a ride in the early morning. My first venture was made before breakfast on Boxing Day; and this was so enjoyable that three more were made in less than a week. On each occasion I had the pleasure of seeing how the sun rises in winter; and let me at once confess that sunrise in December is not the glorious, exhilarating performance I so often see in July. During the short days the world itself seems shrunken, especially of a morning. The sun peeps shyly under a blind only half drawn up. An hour later he shines through the blind itself, with a sort of pearly lustre, as if his beams were struggling through water.

While riding to Wickham my first surprise was the sight of

so much green. The grass looked almost as fresh as it does in September, and the leaves of the holly, cedar, laurel, bramble, and the tall, hardy pine were still coated with a horny, defiant green, while the plentiful crops of moss on the trunks and limbs of the oak, ash, chestnut, and even the birch in patches, presented greens of almost every shade—from a mouldy greyish-blue to a discontented, wavering yellow. Arrived at the wood, I stood near my favourite oaks and admired their perfect shape, their simple, serene dignity, their calm, massive strength. What magnificent skeletons these trees are in winter! I tried to fancy how the skeleton of a squirrel would look on one of the naked branches, but soon gave up the attempt in disgust. The thought that before many months the little fellow will be here in all the joy of his bright, innocent life was far more welcome; and I could wait. In a few minutes my eye wandered to a neighbouring fir tree. This tree had lost all its leaves, but the small branches and twigs were thickly covered with dry cones, of the size and shape of nutmegs. More than once I wondered what sort of a bird had built its nest so close to the end of one of the longest branches. On the way to the wood I had seen several old nests, but they were all tucked in crutches close to the trunks. Presently the nest seemed to rearrange itself. I could now clearly distinguish a small head surmounted by two tiny ears, perched like sentinels, faithful and alert, and then I quickly followed out the figure of my welcome little friend. He sat there perfectly still for several minutes, then he turned round suddenly, ran along the branch and up the trunk to another branch near the top of the tree. Here he settled down to his breakfast. I saw him dispose of three fir-cones and heard the rejected husks fall in the ferns underneath. I was rather anxious to secure one of these husks that I might see what part of the cone had been eaten, but I was unwilling to disturb this simple morning meal. Instead, I gathered several similar cones and brought them home for examination. The poor squirrels are evidently glad of any dry crust in the winter time. These cones are nothing but nobbles of perfectly dry wood covered with thin, horny scales. Sharp teeth and strong claws soon convert these hard grains into meal which, if not exactly fattening, serves at any rate to keep the pretty creatures alive till better food can be found. I have cut a few of these cones open. They are exceedingly pretty inside, but do not seem to contain much nourishment. However, there are millions of them on the trees, and our little pets have the whole day before them. We should be glad to nibble artichokes if we could get nothing else. Before leaving the wood I saw another squirrel on the ground making its way, with its tailed tucked up, to the next tree.

On the following morning, Saturday, December 27, I was in the wood soon after eight, and saw four squirrels. This was a delightful morning, one of the finest of the whole year, there has not been one finer since July. With beautiful warm sunshine

everywhere before nine o'clock, one could hardly believe the year was so near its close. Such lovely shadows are seldom seen. A million pencils were at work sketching the daintiest outlines of familiar objects upon every bit of available pathway, and those delicate bars of shade cast by bare branches upon the moss-covered trunks of the beeches were surely the subtle strokes of some ethereal artist, as if gently breathed upon a patch of sunshine by a passing breeze. This morning I stood watching a squirrel for quite ten minutes before he moved. All this time his ears were perfectly still, and his tail was twisted round the branch on which he sat. Tired of waiting, I walked quietly up and stood just underneath the tree. I could have reached him easily with a ten-foot pole. For some minutes longer there was no movement. At last he gave himself a little shake, looked at me rather indifferently, and resumed his nap. I had already seen another busy with his breakfast in a tree on the opposite side of the path. The little fellow was feasting on fir-cones. How prettily his paws moved while stripping off the scales. Still another sat on the next tree just as busy. Leaving them to finish their meal I looked back for little sleepy head, who had now got up and climbed to the top of his bedpost, whence he seemed to enjoy a fine view. He was probably on the look out for a good seat at the breakfast table. And now something happened that confirmed what had before been only a conjecture. When about a hundred yards from this spot I saw something near the top of one of the tallest firs, a brown lump on a bare branch, not like a nest, but more like a young hedgehog. I felt sure it was a squirrel, and concluded it was asleep. Neither head nor tail could be distinguished. I made up my mind to wait until it awoke. There was no sign of life for a long time, quite a quarter of an hour. The clock struck nine, and I wanted to move on. One more patient look; and then I slapped the trunk of the tree with my hand, feeling sure the vibration would rouse the sleeper. Still no movement. I began to fear I had been mistaken. Picking up a handful of round pebbles, I flung three up into the branches, one after the other, hoping the noise would waken the little sluggard. Then I had to conclude that my eyes had for once deceived me, and I took hold of my bicycle; but before starting I looked once more at the motionless brown lump, very unwilling to leave such an interesting problem unsolved. I almost wished myself a boy again, eagerly eyed the rough bark and blunt, perhaps brittle, stumps, then glanced at my clothes, and finally decided not to climb. With a little impatience I picked up a large stone and threw it almost to the top of the tree. It struck sharply against the trunk, very close to the branch I had been watching so anxiously; and the effect was quite startling. That brown bundle burst into life like a match when struck. It whisked round, then up the trunk and out of sight in a twinkling. After a minute or so I quietly slipped round to the other side of the tree and looked up: there was the

young scamp right at the top of the trunk, stretched to his full length and clinging round it, his pretty head peeping round in search of the enemy. Poor little chap! His enemy was longing to feed him with the best nuts the market can supply.

I was in the wood again on Tuesday morning, December 30, when I saw five squirrels. The weather was not quite so mild this morning, but for the time of the year wonderfully fine. All the squirrels were feeding on the fir trees, and three of the five were seen from one sheltered spot in the pathway. The pretty creatures were very lively this morning. One dared to poach in his neighbour's preserve, and this led to a fine scuffle. The intruder was chased to the top of the tree and down again. Both performers bunched out their tails like those of Persian cats or round flue brushes. A sharp hissing noise was heard similar to that made by a kitten when learning to swear. While watching those in front I fancied I heard one on the other side of the path behind me, but on looking round my eye somehow missed him, although I felt sure he was there. Many a time my ear has detected what has quite escaped my eye. The sound made by the squirrels' feet, that prickly patter of his sharp little claws upon the bark, is as familiar to my ear as the note of the jay, and I always look round with absolute confidence when I hear it behind me. So sure was I that my ear had not deceived me that I soon turned round and looked again. There he was at the very top of the tree, the little monkey, feasting with both hands and a rare set of teeth, his beautiful tail turned up over his back, like a silken canopy over an open-air artist.

The great morning, however, was Thursday, January 1. On the last night of the old year I was riding home on the top of a tram from Croydon, just before midnight, and the air was very keen. The New Year was going to open with a sharp frost, and I decided to rise early and ride to Wickham. I was in the wood by eight. The air was crisp and frosty. It was a cold winter morning, cold but fine. Would the squirrels venture out on such a morning? Never before, at any time of the year, have I seen so many. In half an hour I had seen six, all awake and busy as bees. Two were evidently bent on fun. They sat for a minute or two and began breakfast, then went off for a scamper. They flashed along the branches and bounded from one tree to the next in the most reckless fashion. They did not hesitate in the least when they reached the end of the branch, but sprang forwards to the next as if they did not mind whether they cleared the intervening distance or not. You can generally tell before he gets to the end of a branch whether a squirrel intends to turn or go on; his intention seems to inflame every fibre of his body, and can be recognised as easily as the smell of burning tobacco, or a peeled onion. Now and then, however, when he looks as if he meant to go on, although the next tree is quite beyond his reach, he flows along the bending branch to its very tip, and then, gracefully continuing the gentle curve, glides

over and down to the branch below. Such a movement must be a perfect rapture to his joyous little soul, as it certainly is a joy to the eye of the beholder. While one was busy with a fir-cone on a tree beside the path a young fellow passed on his way to the station. He walked briskly and whistled a merry tune, but the squirrel went quietly on with his breakfast. I wished him "Good morning," and asked if he did not think the squirrels busy. "Yes," said he, "I suppose they are, but I haven't seen any." He did not even turn his head to look. Presently a big, bouncing girl came running along, right under the tree. Her heavy feet rapped like mallets on the hard frozen roadway. The squirrel dropped his breakfast and bolted, went straight along at the same height, from branch to branch, to the farther side of the plantation, without waiting anywhere for a moment. In this way he put eight trees between himself and the flying girl in less than a minute. He now resumed his meal, quite undisturbed by the loud sound of a woodman's axe, or the louder barking of a woodman's dog. At the other end of the wood, while I was looking intently at some moving foliage in a large evergreen fir, my ear caught the familiar patter of prickly feet, and just in front of me a little fellow tore down the trunk of another large tree and across the open space to the next. I had now seen seven, and heartily wishing my lively little friends a Happy New Year, I sprang into the saddle and turned home to breakfast.

EARLY BIRD.

WINTER BELOW BEACHY HEAD.

WINTER below Beachy Head! The very name suggests wild winds and waves and dashing spray. But it is of one of those calm, serene winter days that I write, days which stand out like jewels in a dull setting, when it is a pure joy to be alive, and when, were it not for the frosty crispness of the air, the deep blue of sea and sky would almost cheat us into the belief that summer had come at last.

At the end of the long terraced parade, where bath-chairs come and go in a mournful procession, and hurdy-gurdies mingle their strains with the band, the chalk cliffs begin, rising higher and higher till they tower above us like a great white wall. Here under their shelter we are so absolutely alone that we might be miles away from any dwelling, and the stillness is broken only by the gentle lapping of the waves upon the sand. One can scarcely realise that this calm sea, with its innocent, smiling face, is the cruel monster which only yesterday raged and thundered against the rocks. Yet the signs of storm and stress are not far to seek. Masses of golden-brown bladder-wrack and oar-weed have been uprooted from their bed, and lie tangled on the shore, while, strangest sight of all, on either side,

as far as the eye can reach, stretches an unbroken line of dead crabs and crab-shells. It is as if one had come suddenly upon one of the plagues of Egypt! The shells are of every size and of many varieties of colour, from rich purples to dull greens and browns. Was it the intense cold of the last few days that killed these sturdy crustaceans, or the fierce buffeting of the waves? Probably the former, as the shells are for the most part intact. Perfect specimens of cuttlebone are to be found strewn about the beach, and clumps of the "Flustra" coralline, so closely resembling seaweed. Nearer the cliffs, fragments of chalk have fallen away, revealing sometimes the knobbed whorls of an ammonite, sometimes the impression of a shell. Nowadays, except for the delicate white Pholas which riddles the chalk rocks, this shore is singularly destitute of shells—only the commoner kinds are to be found—limpets, mussels, tiny yellow "winkles," *Purpuræ*, and whelks, whose eggs, like balls of scales, are found in quantities upon the beach. The dark, leathery egg-cases of the skate, "barrows" as they are sometimes called from their shape, are here in abundance, and the smaller purse-like egg-cases of the dog-fish are occasionally met with. Sometimes, too, one comes upon small grain-like substances adhering to the rock. These when hatched produce a tiny sort of minnow. But it is in the pools—those epitomes of the ocean—that the chief treasures are to be found. Here the seaweed, which looks like so much tangled pulp when stranded high and dry upon the beach, floats out its fairy meshes of crimson and pink, and myriads of feathery white tufts dot the surface of the water. These latter are found to be attached to the elastic tubes of sand and shell constructed by the *Terebella*. More often than not the builders of the tube are absent, but sometimes one is fortunate enough to come upon some of these tiny annelids, and if they are taken home and kept in a glass bowl, one may be rewarded by seeing them come out of their dwellings and exhibit the double row of hooks by which they are enabled to climb out of the tubes. In the nooks and crannies of the pools scores of starfish stretch out their rosy fingers, minnows dart from side to side, and a clumsy crab may occasionally emerge from some shadowy recess. The rocky walls of the pool are lined with the little strawberry anemone, with its olive-green or crimson tentacles, bordered with a turquoise beading. Sometimes, too, but far more rarely, one comes upon the beautiful *crassicornis*, like a great chrysanthemum or dahlia, opening its pink, translucent petals upon the sandy bottom of the pool.

For the moment we are distracted from our pool-gazing by the passing of a brown-sailed fishing-boat. To-day fishing looks like a child's simple pastime, while yesterday it meant a struggle between man and the elements. To-day all is stillness and repose, and the flocks of seagulls, floating placidly on the water, seem like an embodiment of the all-prevailing peace.

And this enchanted land lies at our very feet, only to be

spurned, perhaps, as the best gifts too often are—the beach is deserted for the band-stand !

> " To hug the wealth ye cannot use,
> And lack the riches all may gain—
> O blind and wanting wit to choose,
> Who house the chaff and burn the grain !
> And still doth life with starry towers
> Lure to the bright, divine ascent !—
> Be yours the gifts ye would : be ours
> The things that are more excellent."

Eastbourne, 1903. A. E. R.

REVIEWS AND EXCHANGES.

A Preliminary List of the Alien Flora of Britain. By S. T. Dunn, B.A., F.L.S. West, Newman and Co.

We are glad to see this foretaste of the work upon which we have heard Mr. Dunn to be engaged for some time past, and trust that his appointment as Superintendent of the Botanical Department in Hong Kong will not hinder the completion of his task. The present work is merely a catalogue of names, but it runs to 25 pp. Mr. Dunn takes, as botanists are aware, a wide view of the term "alien," including many species, such as *Clematis Vitalba*, *Myosurus minimus*, and *Ranunculus repens*, which are not usually so considered. In his promised "Flora" he will have to give us a revised discussion of the categories under which Watson distributed such plants, such as "casuals," "denizens," &c. What is also much wanted is an accessible series of descriptions of those plants, which, though excluded from our British Floras, are constantly thrusting themselves into our notice in cornfields, on ballast heaps, and elsewhere. We hope, therefore, that Mr. Dunn's "Flora" will contain such descriptions. Meanwhile he appeals for additional observations on aliens, their degree of permanence, and mode of occurrence.

Society for the Protection of Birds. Twelfth Annual Report, 1902, and *Proceedings at the Annual Meeting, February 10th*, 1903.

This is certainly a most encouraging and gratifying Report. If the working expenses appear high and the necessity for printing many pages of acknowledgments of shilling subscriptions is to be deplored, there is the countervailing fact of a substantial investment. Naturally the Wild Birds Protection Amendment Act, and the prohibition of the export of feathers by the Indian Government, the Nature-Study Exhibition, and the Bird and Tree School Festivals inaugurated by the Society, figure prominently in the account of an excellent year's work. We hope the Society will receive substantial support for its Watchers' Fund, the maintenance of which is absolutely essential to the preservation of our rarer British species.

Sixteen Years with the Common Sparrow. By Joseph P. Nunn. Warren Bros., Royston, Herts. Price 6d.

This is an interesting defence based upon personal observation ; but when the author tabulates 945 clutches comprising 4,089 eggs of this one species in his own cabinet, one feels that a sparrow might exclaim, "Save me from my friends !"

One-and-All Gardening, 1903. Edited by Edward Owen Greening. Agricultural and Horticultural Association. Price 2d.

This is the eighth annual edition of this wonderful twopennyworth. Though not, perhaps, quite as well printed as some of its predecessors, its 200 pages, with an illustration of some beautiful plant or garden scene, or a portrait of some garden-lover, on almost every one of them, make its popularity secure. Practical papers on Sweet Peas and Fruit Culture jostle in the crowded contents against

"appreciations" by leading men and women of letters, or pleasant chats on Sundials or the Plants of the Bible.

The Parents' Review for March, amongst other excellent matter, contains the third of Mr. Collingwood's practical and sympathetic Fésole Club Papers, full of the spirit of his master, John Ruskin. It is on "Flower Studies in the Fresco School."

Transactions of the City of London Entomological and Natural History Society for 1902. Price 2s.

Besides the usual routine matter of little interest to any but the members of the Society, this Report contains Mr. Prout's Presidential Address, dealing with the sporadic apppearance of Lepidoptera in exceptional numbers, and several valuable, though necessarily technical, papers.

Nottingham Naturalists' Society: *Fiftieth Annual Report and Transactions for* 1901-2.

In addition to Mr. Bradshaw's Presidential Address, this Part of the Transactions of what we may now fairly term this venerable Society is mainly occupied by a most valuable paper on "The Life History of a Mountain-Range," by Mr J. J. H. Teall, F.R.S., Director-General of the Geological Survey, illustrated with diagrams of the structure of the Alps.

Received:—*British Carices*, arranged by F. C. Crawford, a tabular chart of names; *Snake-feeding at the Zoological Gardens*, Humanitarian League Leaflet; *Hints*, No. 6, price 1d., containing a paper by Watkin Watkins on London Birds; *Board of Agriculture Leaflets*, Nos. 80 and 81, on *The Use of Artificial Manures* and *A Substitute for Dishorning* respectively; *The Occasional Paper of the Berks, South Oxon, and North Hants Footpaths and Open Spaces Society*, No. 12; *The Butterflies and Moths of Europe*, by W. F. Kirby, F.L.S., Parts 22 and 23; *The Victorian Naturalist* for January; *The American Botanist* for February; *The Naturalist*, *The Irish Naturalist*, *Nature-Study*, *The Humanitarian*, *The Animal World*, *The Animals' Friend*, *Our Animal Friends*, and *The Agricultural Economist* for March.

NATURAL HISTORY NOTES AND QUERIES.

Polydactylous Cats.—A few years ago I had a cat with an extra claw on the forelegs like that described in NATURE NOTES (p. 51), which came from a family all of whose members had the same peculiarity. This, I believe, is not uncommon in the domestic cat.

March, 1903. EDMUND THOS. DAUBENY.

In answer to the question signed by Elizabeth Hopkins, I wish to say that I now possess two tabby cats, brothers, and one has twenty-four toes and the other has twenty-six, all with claws, seven toes on each front paw and six on each hind paw.

Castle Morton, Worcestershire. ADELAIDE WALTERS.

What is the Barley-bird?—I was told lately by a Dorsetshire clergyman that there is a bird in his neighbourhood (near Poole) called the barley-bird by the country folk. He heard it in the summer and the call-note was a short, sharp "tweet." I find from Mr. Percival Westell's "Handbook of British Birds," that the name of barley-bird is given to the siskin, but the siskin is unknown about there, and my relative thought it might be the wryneck, as in John's "British Birds" the name barley-bird is given to the wryneck, thus adding another local name to the dozen already ascribed to it by Mr. Percival Westell.

Teignmouth. CAROLINE E. HARLEY.

Kestrel.—In answer to Mr. F. B. Doveton, who writes in your March number concerning the kestrel, I should like to say that I kept one of these birds as a pet for some considerable time, and that it nearly always devoured the heads of the birds and small animals which I gave it as food first, and evidently did consider them to be "tit-bits."

102, *Alleyn Road, West Dulwich, S.E.* ROBERT B. FIRTH.
March 5, 1903.

Pheasants eating Hazel-nuts.—A flock of tame pheasants regularly come from my woods each morning to enjoy a feast of sopped bread and coarse oatmeal which is scattered for them outside the dining-room window. At the same time handfuls of hazel-nuts are thrown out for the squirrels. To my surprise I have lately noticed that the pheasants eagerly pick up the nuts, shells and all. I saw one hen swallow eight nuts in succession, a proof, surely, that these birds must possess wonderful powers of digestion.

ELIZA BRIGHTWEN.

Marsh Tit.—A titmouse of this species has frequented the garden here for eeks. It is tamer than any other tit, and feeds regularly on a half cocoanut suspended in the verandah. The other day it allowed me to come within six feet of it and take its photograph while swinging on the cocoanut.

The Poplars, Pucklechurch, BLANCHE A. CONEY.
March 5, 1903.

Sparrows.—As an instance of the destruction that sparrows can cause to crops, a field of more than an acre was last year sown with vetches and oats. Not a single blade came up, the whole field having been entirely stripped by the domestic sparrow.

BLANCHE A. CONEY.

Cowbird.—*Re* note on "Cowbird" in February NATURE NOTES, I would say that the Cowbird of Eastern America, *Molothrus ater*, is a starling and so catalogued by American ornithologists. Its nearest relations are the Orioles, blackbirds (*Agelaius*), meadowlarks (*Sturnella*), and bobolink (*Dolichonyx*). It is therefore also not distinctly connected with the crows, grackles and jays.

Binghampton, New York, U.S.A., WILLARD N. CLUTE.
February 28, 1903.

[Mr. A. H. Evans, in the "Cambridge Natural History," classes *Molobrus*, as the generic name should be spelt, in the Sub-family *Agelaeinæ* of the Family *Icteridæ*, comprising, as he says, "'the American Orioles' or 'American Starlings,' which are certainly not Orioles, though analogous to the Starlings." The true Starlings, that is, belong to a distinct though not distant Family. Of course the affinities of one species are those of the whole of its genus, while the misleading character of American popular names for birds is proverbial.—ED. *N.N.*]

Cold Weather.—The unusually severe season that we are experiencing here has, amongst other things, brought us birds that are ordinarily strangers. During the last few days we have had as visitors around the Hotel Belmont, which is situated somewhat above Montreux, at an altitude of about 1,450 feet above sea-level, and 200 above the lake, a flock of very beautiful birds of the crow tribe. They are about the size of a small pigeon, the cock bird, however, considerably larger than the hen. Their plumage is what is generally called black, but as it appears to my eyes in the sunshine it is a very deep lustrous indigo. In both sexes the bill is pale yellow, and not nearly so powerfully built as that of the rook: the legs are red. An Irish lady in the hotel observes that they must build in the rocks because they strut about like tame pigeons. She is right, and I notice that they soar like eagles, in circular fashion. This shows that they have been driven down by the cold from the higher mountains above the level where trees exist. Like the gulls from the lake, they are here to pick up bread that is put out for or thrown to them, and what else they can find. And so ignorant people here call them black gulls, but their proper name is *Chocard des Alpes*, sometimes spelt *Choucas*. They are not so noisy as jackdaws. Usually there are a few crows about, and most of them are smaller than the English birds of that name. I do not remember having seen rooks in Montreux. The wings of the chocard are well spread and the feathers much separated at the points, the tail long and well spread in flight also, the appearance of the bird on the wing being singularly flat, like a plate. All this so that he may be suited to the rarefied atmosphere of his high home. On the contrary, gulls and other water birds have narrow wings, like the blades of a knife, with short tails. I do not notice the birds around the hotels lower down.

Hotel Belmont, Montreux, Switzerland, GILES A. DAUBENY.
January 20, 1903.

Chameleon's Egg.—The enclosed egg, laid by a chameleon at Forest Gate, may interest you.

The little creature, who is a great pet, laid a couple, one of which was cracked in falling. The lady owner tells me that her chameleon is the only survivor among a great number brought her from Spain, and that owing to the great mortality she has now begged her friend to import no more. She has been able, however, to keep her favourite alive and happy. It sleeps in a warm basket, takes meal-worms for its food, and drinks a drop or two of tepid water, daily. In this way it has passed through the winter, the basket being placed on a hot water bottle during severe times. It is on excellent terms with its human friend, and appears to favour sitting on her head or hand to any other position, when out for exercise on the table.

I may add that a tame chameleon kept by some friends with whom I was in the habit of staying, obviously knew those who fed and cared for it from strangers: it would turn blackish, and even hiss at the latter; while, when I took it into the garden it at once contentedly curled its tail round one finger, and leered up in the oddest way as if he knew my face. I then took it the round of the gooseberry bushes, when it darted its wonderful tongue at every moving insect that it saw, butterflies included. After munching and "making faces" awhile, it ejected the wings and tough bits. A most favourite place for this little fellow was the middle of a sunflower, to the colour of which it attempted to change. To this it would cling and would eat the bees which came for honey, apparently regarding their sting as a sort of condiment; say, a pinch of pepper. Poor "Jimmy" as he was called, wandered off one sunny day and was seen no more.

March 19, 1903. EDITH CARRINGTON.

[The egg, which was at first, Miss Carrington says, firm, hard, and white, is now orange and shrunken laterally. It is 15 millimetres in length and like other reptilian eggs, tapers equally towards both ends. It was laid in October.—ED. *N.N.*]

Bees Stinging Drones.—Last year there was a discussion in your pages as to whether the worker bee killed the drone by stinging. Kirby and Spence, in their "Introduction to Entomology," tell us that M. Huber placed some hives on plates of glass in order to make observations on the point; and that he watched the workers in the act of seizing the drones "by their antennæ, their legs, and their wings, and killing them by violent strokes of their sting, which they generally inserted between the segments of the abdomen. The moment this fearful weapon entered their body the poor helpless creatures expanded their wings and expired. After this, as if fearful that they were not sufficiently despatched, the bees repeated their strokes, so that they often found it difficult to extricate the sting . . . . Not content with destroying those that were in the perfect state, they attacked also all such male pupæ as were left in their cells, and then dragging them forth, sucked the fluid from their bodies and cast them out of the hive."

Market Weston, Thetford, EDMUND THOS. DAUBENY.
February 7, 1903.

The Cinnabar Moth.—The caterpillars of the Cinnabar moth (*Callimorpha Jacobææ*) do good service in checking the spread of the ragwort or ragweed (*Senecio Jacobæa*), on which they feed. It is not uncommon to see in field after field all the plants of this noxious weed destroyed by these useful insects. As the gaudy caterpillars make no attempt at concealing themselves, and attract attention at a distance, they would soon be exterminated were they preyed upon by birds. Most caterpillars of conspicuous colour that expose themselves to view are protected by being so nauseous that no insect-eating birds will touch them. The Cinnabar moth caterpillars are thus guarded, and it is improbable that rooks, or even the London sparrow himself, who is equal to almost anything, would dare to eat them. The moth is rarely found in Scotland, in parts of which the ragwort is a great nuisance in spite of its seeds being a favourite food of many birds. In "Wild Sports of the Highlands" St. John says, "Every pigeon's crop he examined was crammed as full as could possibly be of the seeds of two of the worst weeds in the country, the wild mustard and the ragweed, which they had found remaining on the surface of the ground, these plants ripening and dropping their

seeds before the corn is cut. No amount of human labour and search could have collected, on the same ground at that time of year, as much of these seeds as was consumed by each of these 500 or 600 wood pigeons daily."

EDMUND THOS. DAUBENY.

Has no error of observation occurred? The larvæ of *Euchelia Jacobææ* is always instanced as a beautiful example of protection by "warning colours," the black-and-orange striped caterpillar making itself most conspicuous on the ragwort. Is it not possible that the crows were in search of some other food (*e.g.*, wireworms) and that the *Euchelia* larvæ were simply migrating to another patch of their food plant?

Passmore Edwards Museum,
Stratford, Essex. W. COLE.

Earwigs.—These insects were originally classed by Linné with the *Coleoptera*, or beetles. He placed them after the *Staphylinidæ*, to which the short tegmina give them a superficial resemblance. They are now generally treated either as a section of the *Orthoptera*, or as a small independent order under the names quoted by Mr. Daubeny. We have between 500 and 600 species on our lists at present from all parts of the world. If Mr. Daubeny will refer to Murray's "New English Dictionary," he will find the true derivation of the word "earwig" from Anglo-Saxon of the year 1000. The derivation, "earwing," that Mr. Daubeny asserts so confidently is not even alluded to by Murray, and was only invented in the last century to explain away the modern English name, and will not, of course, apply to the equivalent names of the insect in other European languages, such as "perce-oreille," "Ohrwurm," &c. W. F. KIRBY.

Slugs.—The habits of these not very interesting creatures are generally watched in reference to their depredations, as all lovers of a garden know what abundant suppers they make off their young flower and vegetable seedlings. But they are not wholly vegetable feeders, for I have been informed recently of an instance where they made their way into a dining-room night after night in search of crumbs under the table. The slimy trail along the carpet told the tale, and one night search was made under the table and the unwelcome visitors discovered. They had found out a small hole between the floor and skirting board and so had obtained entrance to the room which is level with the garden. I have been told that slugs can be trapped with bran, but it seems any crumbs will attract them.

Teignmouth. CAROLINE E. FARLEY.

Eoliths.—I am much obliged to the correspondent who answered my queries so clearly and fully. Personally I have never doubted the human workmanship of the eoliths; but I was not clear as to their separation *longo intervallo* from palæoliths. F. G. S.

Thunderbolts.—Now that there is a discussion in your pages about "the fall of stones from the sky," will some one enlighten us on thunderbolts? We have been told more or less all our lives of these things falling from the heavens during thunderstorms, often doing great damage, and the papers announced one the other day. What in the world are they?

March, 1903. EDMUND THOS. DAUBENY.

SELBORNE SOCIETY NOTICES.

Council Meeting.—The usual monthly meeting of the Council will be held at 20, Hanover Square, W., on Wednesday, April 8, at 5.30 p.m.

New Members.—Alfred Deed, Esq., Blackheath; R. Russell, Esq., and Mrs. Russell, Belgrave Road, S.W.; Cork Nat. Field Club (per W. B. Lacy, Esq.); Charles Platt, Esq., Wetheral; Francis L. Jandron, Esq., Clapham; Mrs. A. L. Phillips, Lostwithiel; Clifton H. Regnart, Esq., New Barnet; G. H. Horne, Esq., Streatham; Mrs. Dougan McDonald, Stirling; Edmond Thompson, Esq., Hampstead; Jesse Argyle, Esq., Hampstead; Miss Hill, Hampstead; Mrs. T. Grosvenor Lee, Clent; Miss Walker and Miss W.

Walker, Hampstead; Miss Secretan, Tufnell Park; Miss Steele, Wormwood Scrubs; Samuel Buckley, Esq., Edgbaston; Mrs. Frankland, Northfield; Frank Welch, Esq., Springfield Road, N.W.

Donations and Subscriptions.—The Council beg to acknowledge the following Subscriptions over 5s.: E. A. Bristow, Esq., 10s.; Alfred Deed, Esq., 10s.; G. B. Milne-Redhead, Esq., 10s.; Clifton H. Regnart, Esq., 7s. 6d.; G. H. Horne, Esq., 7s. 6d.; O. V. Aplin, Esq., F.L.S., 7s. 6d.; Samuel Buckley, Esq., 21s.; Mrs. A. Cook, 10s.; Miss C. Alston, 21s.; F. H. Daly, Esq., M.D., J.P., 7s.; Miss Underwood, 10s.

NEWS FROM THE BRANCHES.

Birmingham and Midland.—Mr. Richard Kearton, F.Z.S., delivered a most interesting lecture on "Wild Nature's Ways," at the Town Hall, Birmingham, on March 12, before a large audience, under the presidency of the Lord Mayor, Mr. Alderman Hallewell Rogers. At the close the lecturer, who illustrated his subject with a splendid series of lantern slides, was heartily thanked.

Croydon.—On February 5, Dr. William Martin, M.A., delivered a lecture at the North Park Ladies' College, entitled, "Gilbert White at Selborne and Ringmer." New slides of Selborne were exhibited from photos of out-of-the-way "bits" of the neighbourhood, and the little-known village of Ringmer in Sussex was represented by some excellent slides of "The Delves," the residence of Mrs. Snooke, and the original home of Timothy the Tortoise.

On March 5, a lecture was delivered by Mr. Edward Connold, F.E.S., on "British Vegetable Galls," illustrated by the lantern.

SELBORNE SATURDAY AFTERNOONS.

On February 28, nearly sixty Selbornians visited the Soane Museum in accordance with the arrangement by the Curator, G. H. Birch, Esq., F.S.A., who was, unfortunately, too unwell to conduct the party. The visit proved, however, of very considerable interest, owing to the unique collection of curios and works of art brought together by the indefatigable founder of the Museum. It is difficult in such a bewildering variety of exhibits to say which excited the most attention. The paintings by Hogarth and Van Dyck, and the moving wall on which some of them were hung, the Egyptian sarcophagus of almost transparent alabaster, probably the finest discovered by Belzoni, the statuary, the pottery, the architectural models, the cameos, the old illuminated books, would each in turn have provided a sufficient attraction. To appreciate these and all the other exhibits of this unique mansion would require weeks. We can only look forward with pleasure to the time when the Curator's kind offer to again welcome Selbornians to the Museum can be accepted.

About forty Selbornians were present at the Natural History Museum on March 14, and were conducted to the Gallery of Whales, where Dr. A. Smith Woodward, F.R.S., gave a very interesting demonstration. He first mentioned that many people erroneously considered these animals to be fishes, because they live entirely in the water, whereas they are really mammals, or warm-blooded animals. They possess no gills through which they can respire under water, but have blow-holes or nostrils at the summit of their head, through which they breathe when they come to the surface, producing the usual spoutings. The two chief varieties of whales are the Spermaceti whale, or Cachalot, and the whale-bone whale. Dr. Woodward pointed out that owing to the oily nature of the flesh or blubber (which is the true skin, and is never less than seven or eight inches thick) it is impossible to preserve it, and hence the models now shown were built up from very accurate photographs taken soon after capture. The eyes of the whale are particularly small for its size and are behind the angles of the mouth. Further back is a small hole which represents the external ear, appearing to be of a rudimentary character; but the internal part of the ear is so perfect and well developed, and the power of hearing so great, that it is capable of communicating with its companions several miles away. The fin of the whale appears on its side as a small flipper, which when denuded of its covering is

found to contain the usual bones of the forearm. A rudimentary hind limb projects about the middle of its body, representing pelvis and femur. The tail is an enormously powerful organ, and acting like the screw of a ship, propels it through the water. Dr. Woodward then pointed out the various bones of the skeleton, showing also the very large cavity in the head of the Spermaceti whale, from which the spermaceti of commerce is obtained, some specimens yielding about a ton. Frequently barnacles attach themselves to the skin of the whale, and in order to rid itself of these encumbrances it seeks fresh water, and by so doing occasionally gets into shallow water, and being unable to retreat, is stranded and captured. The food of the Spermaceti whale consists principally of cuttle-fish, specimens of some of the rarer kinds of which animals which have never been seen elsewhere have been found in their stomachs, showing the depths to which the whales descend for their food. The Spermaceti whale possesses well-developed teeth in the lower jaw, and in this respect differs from the whale-bone or Greenland whale, which has instead of teeth numerous plates of "whalebone" fixed to the palate, having a fringe of fibrous bristles, which act as a sieve to strain out the water, and retain the tiny molluscs on which the creature feeds. The whalebone from one of these animals has been estimated at the value of about £200. The Narwhal possesses a long spiral, tapering rod of ivory, sometimes attaining to the length of eight or ten feet, forming a sort of tusk, which is really an excessive growth of the canine tooth on the left side, the right one remaining undeveloped. Much other important information was given by Dr. Smith Woodward, after which a very hearty vote of thanks was accorded him for his very entertaining and instructive demonstration.

FIELD CLUB RAMBLES.

April 18.—Kew Gardens. Meet at the main entrance on the Green at 3 p.m. Guide, Prof. F. E. Hulme, F.S.A., F.L.S.

April 25.—Northwood, Middlesex. Train leaves Baker Street (Met. Rly.) at 2.21; Swiss Cottage 2.29. Take return tickets to Northwood, which are issued from all stations on the District and Metropolitan Railways. Tea at Ye Olde Greene Manne, Batchworth Heath. Guide. Mr. J. E. Whiting.

May 2.—Woldingham, Surrey. Ramble through the fields round Woldingham and Warlingham. Train leaves London Bridge (L.B.S.C.R.) 2.25; Victoria 2.30 (L.B.S.C.R). Take cheap return tickets to Woldingham. The times of these trains should be verified from the May time-tables. Passengers from London Bridge may have to change at East Croydon. Guide, Mr. M. Hunt.

Notices for Railway Stations, Hotels, Inns, Cyclists' Rests, &c.—A card 10 in. by 8½ in. (as given below) is now ready for circulation, and the Secretary will be pleased to forward specimen on receipt of 1d. stamp for postage. To Branch Secretaries and others requiring a larger supply the price is 1s. 6d. for 25 copies, post paid.

Don't gather such quantities of *Wild Flowers* and *Ferns* that before the day is over you are obliged to throw them away on the road-side. By such gathering you injure the flora of the district, and you take away pleasure from many people who like to see flowers and ferns growing in their native haunts.

Don't disturb the *Birds* in their breeding season.

Don't litter the places visited with *Waste papers* or torn letters.

Don't leave *empty bottles* and other *débris* of your picnics to vulgarise the spots, the scenery of which you have been enjoying.

Leaflets.—The Council wish to draw the attention of members to the undermentioned Leaflets, the circulation of which is desirable.

The cruelty of Wearing "Osprcys"—R. B. Litchfield.

To Boys and Girls.

A Plea for the British Butterfly—W. F. Kirby.

The Secretary will be pleased to forward them, post paid, on the receipt of 9d. per 100 copies.

A Chart showing dates of Styles and Periods of English Gothic Architecture 1d. each, if stamped addressed envelope enclosed.

Selborne Society Badges. The attention of members is called to the recognised badge of the Society. They are tastefully designed in pale and dark blue and silver, the outlines being as shown in the accompanying illustration.

They are especially useful as a means of identification between Selbornians at branch meetings, or at country Field Club Rambles.

Members desiring either form should write to the Secretary enclosing postal order.

The prices are (post paid)—Brooch, 3s. 6d. ; Pin, 1s. 9d. If by registered letter 2d. extra.

ANSWERS TO CORRESPONDENTS.

Roger.—The Linnean Society of London was founded in 1788 by Dr. James Edward Smith (afterwards knighted), who had purchased the collections and library of the great Swedish naturalist. It was incorporated by Royal Charter in 1802, and, like other learned Societies, is provided by the State with a suite of apartments at Burlington House, Piccadilly. It publishes quarto Transactions and an octavo Journal, each in two series, Botanical and Zoological, at prices varying according to contents. These can be obtained at the Society's apartments, or through Messrs. Longmans or Messrs. Williams and Norgate. Besides the Fellows, who pay an annual contribution of £3, and are not limited in number, there are 50 Foreign Members and 25 Associates, gentlemen who have done good scientific work, though they may not be in a position to become Fellows.

NOTICES TO CORRESPONDENTS.

1. All communications for NATURE NOTES must be authenticated with name and address, not necessarily for publication.

2. The return of an unaccepted contribution can only be guaranteed when it is accompanied by a stamped and addressed envelope. We cannot undertake to name specimens privately, to return them, or to reply to questions by letter.

3. All communications for any number must be in the Editor's hands by the 10th of the preceding month.

4. Communications for NATURE NOTES, books for review, specimens for naming, &c., should be addressed to the Editor, PROFESSOR BOULGER, F.L.S., F.G.S., 11, Onslow Road, Richmond, Surrey.

5. For the supply of the Magazine to others than members address the publishers, Messrs. JOHN BALE, SONS AND DANIELSSON, Ltd., 83-89, Great Titchfield Street, London, W.

6. Letters connected with the business of the Society, subscriptions, &c., should be addressed to the Secretary, Mr. R. MARSHMAN WATTSON, 20, Hanover Square, W.

Nature Notes:

The Selborne Society's Magazine.

No. 161. MAY, 1903. Vol. XIV.

OBJECTS OF THE SOCIETY.

To preserve from unnecessary destruction such wild birds, animals and plants as are harmless, beautiful, or rare. To discourage the wearing and use for ornament of birds and their plumage, except when the birds are killed for food or reared for their plumage. To protect places and objects of antiquarian interest or natural beauty from ill-treatment or destruction. To promote the study of natural history.

SELBORNIANA.

Annual Meeting and Conversazione, Tuesday, May 5.—Members will assemble at 20, Hanover Square, at 7.30 p.m., and the Annual Meeting will commence at 8 p.m. Lord Avebury, F.R.S., will take the chair, and address the members and their friends. His lordship will be supported by Sir George Kekewich, K.C.M.C., Sir John Cockburn, K.C.B., Professor F. E. Hulme, F.L.S., Professor G. S. Boulger, F.L.S., F.G.S., W. Whitaker, Esq., B.A., F.R.S., F.G.S., E. A. Martin, Esq, F.G.S., W. Mark Webb, Esq., F.L.S., R. Hedger Wallace, Esq., and also it is hoped by the Right Hon. James Bryce, M.P., Sir Robert Hunter, M.A., Andrew Pears, Esq., and others. After the meeting a lecture on "Selborne," illustrated by new views of the village, will be given by Dr. Bowdler Sharpe, in the Hall; and on the first floor there will be a Music Recital (grand piano and Simplex Pneumatic Player kindly supplied by Messrs. Moore and Moore). There will be an interval after the meeting for refreshments and for viewing exhibits. Tickets can now be had of the Secretary, 20, Hanover Square. A stamped addressed envelope (square) should be enclosed.

PROPOSED VISIT TO SELBORNE.—The attention of members is directed to the particulars, so far as at present arranged, which appear on the last page of this number.

THE HOME COUNTIES NATURE-STUDY EXHIBITION.—The following letter has been sent to the Press by some of the Executive of last year's Exhibition :—

"The Association which held the very successful Nature-Study Exhibition last year was organised for that purpose alone, and has been dissolved. It suggested, however, in its Official Report, that the movement with which it was so prominently identified could, for the present, be best advanced by local organisations, the activity of which it had already noted with satisfaction. In order, therefore, that the work may be continued in the South Eastern Counties of England, which are more or less in touch with the metropolis, and as an outcome of the efforts of delegated members of the Middlesex Field Club and Nature-Study Society and the Selborne Society, a Home Counties Nature-Study Exhibition is being organised in London on definite lines, and will be held this year, it is hoped, in the Gardens of the Royal Botanic Society, at a time convenient to teachers.

"Lord Avebury, F.R.S., is Chairman of the Committee, and the list of patrons already includes the Countess of Bective, Lady Frederick Cavendish, the Marquess of Ripon, the Earl of Aberdeen, the Earl of Stamford, the Bishop of Hereford, Lord Herries, the Right Hon. R. Henry Hanbury, M.P., Sir George Kekewich, Sir Joshua Fitch, Sir Philip Magnus, and the officers of the recent Nature-Study Exhibition—Sir John Cockburn, Mr. C. S. Roundell, and Mr. J. C. Medd. Upon the Committee will be found such well-known naturalists, educationalists, and public people as the Right Hon. James Bryce, M.P., the Right Hon. Jesse Collings, M.P., the Hon. Walter Rothschild, M.P., Sir John Hutton, Mr. G. Herbert Morrell, M.P., Mrs. Brightwen, Mrs. Franklin, Mrs. Owen Visger, Prof. Henslow, Prof. Boulger, Mr. A. D. Hall, Mr. Richard Kearton, Mr. C. J. Cornish, Mr. M. E. Sadler, Mr. Harold Wager, Mr. A. J. Shepheard, Dr. Kimmins, and Mr. H. Macan.

"On behalf of the Executive Committee, and as members of the Executive of the late Nature-Study Exhibition Association, we venture to bring the undertaking to your notice, and to intimate that after carefully considering the results and reports of last year's Exhibition, the Committee has drawn up a scheme with schedules, which may be obtained from the Hon. Secretary, Mr. Wilfred Mark Webb, at 20, Hanover Square, W., who will gratefully receive all offers of help in the form of prizes, donations, subscriptions, and suggestions as to exhibits.

"We sincerely trust that this effort to localise and to pro-

mote the Nature-Study movement will meet with the ready sympathy and support of all interested in a branch of education so full of promise."

THE SCHOOL NATURE-STUDY UNION.—This Union, the Hon. Secretary of which is the Rev. Claude Hinscliff, of 220, Cable Street, London, E., is being formed among teachers and others who recognise the educational value of Nature-Study, and the desirability of some concerted action for promoting it on definite lines. The Union seeks to gain public interest and support whereby to encourage School "Journeys," Exhibitions and Flower Shows, and to establish such institutions as local School Botanic Gardens for practical study and work.

It is further proposed to publish monthly an official organ of the Union, a "*Nature Study Review*," through the medium of which all communications may be dealt with, and meetings convened. Members are asked to pay a subscription of two shillings for the current year, and will receive the Review upon publication.

A start has been made by organising visits to London Museums, and help is solicited in the way of donations, volunteer guides for school journeys, and botanical and geological specimens on loan for schools. Those children who love Nature and are possessed of pocket money are invited to band together to help their less-fortunately circumstanced fellows.

THE UN-SELBORNIAN PARSON.—An unpleasant contrast to the article we print on another page is afforded by the Devonshire Rector, whose advertisement, offering to supply "beautiful Devonshire ferns from the borders of Dartmoor in lots of 15 and 20," has been pilloried by Mr. W. J. Richards in *The Western Morning News*.

BETTER LATE THAN NEVER.—An effort is being made in Cobham, Surrey, to put a stop to wild birds being snared and killed on Sundays. Cobham is one of thirteen parishes in the county where this is permitted to be done, and, in consequence, each Sunday brings a host of bird-catchers from London, who play havoc amongst the small birds. Resolutions have been passed by the Parish Council in favour of putting a stop to this serious state of things, and the County Council have petitioned the Home Secretary to include the district in the order prohibiting the snaring and killing of wild birds on Sunday.—*Ipswich Evening Star*.

OBITUARY.—We are very sorry to have to chronicle the death of Miss C. Barnard, one of the most single-minded workers for animals whom we have known. Her special work was at

Sawbridgeworth in Hertfordshire, where she was mainly instrumental in founding a flourishing Band of Mercy, of which the good Earl of Shaftesbury became President, and also in instituting an annual Cart Horse Parade. At Kentish Town also, where she lived when in London, she had for several years a similar Band. Her work was thus largely among the young, and in conjunction with Mr. T. W. Rogers she published a useful book called the "Band of Mercy Entertainer," containing recitations and pieces for performance by children. It has for some time been out of print, but it was a pioneer work of its kind, and was the precursor of Mrs. Suckling's "Humane Educator" and "Humane Playbook."

Miss Barnard's indirect work was, however, perhaps, even more important than her more visible efforts. It was a saying of hers, "My work is to set others to work," and there was much truth in it. She always kept herself informed of what was going on on all sides in the humane movement, and was well known, not only to the anti-vivisection societies, but also to the Bird Protection Society, Humanitarian League, Canine Defence League, the Dicky Bird Society, and many others from which she constantly procured literature for distribution.

In this way, by a pamphlet here, a letter there, and encouraging words to one and a judicious introduction to another, she was an indispensable link in many a chain where it was least suspected.

Miss Barnard was large-hearted, practical and catholic in her work, and having travelled a good deal, her interest and help were given to the societies in Paris, Naples, Rome, and America, no less than to those of her own country. In fact, all who were trying to better the condition of animals had her sympathy and hearty co-operation, no matter what their creed or nation.

Her personal life was of the simplest. She saved the money which most people would spend on themselves in order that the animals might have the benefit of it, and her death will be a real loss to many of them.—*From "The Animals' Friend."*

House to Let at Selborne.—We have been asked to announce that the house adjoining the Post Office at Selborne is to be let furnished during the spring and summer of this year. Application should be made to Miss Legg at the Post Office.

THE SELBORNIAN PARSON FROM WITHIN.

WHEN the Selbornian is located at the parsonage, it is his fault if he is not able to diffuse the Selbornian atmosphere a little further than is possible to his lay brother. To begin with he has free access (at present) to the National School. In this case he gives a weekly object-lesson to the upper standards all the year round, choosing his subject somewhat haphazard from whatever he can lay his hands upon. During winter, of course, the task is somewhat difficult, but he describes the winter migrants, and bids the children look out for them, making little rhymes to assist their memory, such as this for the Fieldfare,

> Rack-a-tack-tack
> Blue head and blue back,

and this from Hudibras—

> As fools are known by looking wise
> So men catch Woodcocks by their eyes.

He willingly sacrifices the buds of his rhododendrons and horse-chesnuts, to show the children the promise of the May, and the flower-shelf in school is occupied, even in the dead season, by the winter jasmine, the winter heliotrope and the winter aconite.

The rectory porch is the receptacle of strange beasts and plants from January to December. There stands the glass-fronted caterpillar-box, which has been occupied in turn by the purple hair-streak and the death's-head, the stag-beetle, the blind-worm and the barbastelle.

But it is in the garden that his Selbornian instincts have free play. He tells the children that he has written the following inscription on the gate, in invisible ink:

> No birds that haunt my garden free
> To slaughter I condemn.
> Taught by the Power that pities me,
> I learn to pity them.

Perhaps some day the letters may be visibly written on a brass plate.

Two classes of the Sunday School meet at the rectory, boys in the morning and girls in the afternoon, and so become well accustomed to seeing the tits' coco-nut, and are allowed to visit any nests of special interest; and up to the present we have not had any certain case of this confidence being abused.

The first Sunday in May is Flower Sunday, when the Rector is expected to preach to the children from a bunch of flowers. The columbine, the garlic-mustard, the narcissus, the adder's-tongue, the gorse, the gout-weed, the bleeding-heart and the honesty have supplied obvious morals, but he thinks that this

year he must change the date for the sake of variety. On this occasion the Sunday-scholars walk round the garden before church and inspect the nesting-boxes, and the brave mother blue-tit sits stolidly on her eggs while forty children in succession lift the lid to gaze upon her.

There are generally some vegetable curiosities on view in the garden or the greenhouse, such as the mistletoe, the sensitive plant or the egg plant. The prophet flower has been lately added, but the Dutchman's pipe is still a desideratum.

In one corner of the garden stands an old aviary called the Birds' Hospital, which has been tenanted by an owl that came down a chimney, a peewit with a broken wing, and two young sparrow-hawks that appeared to have been deserted by their parents. The last arrival is a crippled kittiwake.

The pond is occupied by a family of wild ducks, of whom some are pinioned and others are frequently to be seen flying over the village. With some qualms the rector allows the boys to fish for his roach in the summer, and has little doubt that if their numbers were not reduced they would become overcrowded and diseased.

The presence of trees and water in the sanctuary is attractive to many birds and beasts, among which we have noticed all the common kinds of game, the two common owls, the heron, sandpiper, kingfisher, moorhen, snipe, nightjar, woodlark and cirl-bunting. The wryneck, after some hesitation, accepted a nesting-box for the first time last year.

As regards gardening in the more limited sense, one of the Selbornian's chief hobbies is tree-planting, but so long as the Judas tree only stands about two feet high, the children will not believe that the false apostle ever hung from it. He is also fond of trying bulbs in the grass of the orchard, where various daffodils, wild tulips, anemones, and fritillaries make a pleasant picture. He is surprised, by the way, that the meadow saffron (*colchicum*) is recommended for this purpose, considering its poisonous qualities.

He has not been very successful with aquatics, and he fancies that the fish, ducks and water-rats unite to render his efforts useless.

Beyond the limits of his garden also, he attempts to do something to hinder the "uglification" of his parish, by planting a few trees here and there by the roadside, after consulting the district councillors and the owners or occupiers of the adjoining land, and his churchwardens, while thinking him eccentric, make no objection to his cutting an owl-hole through the shutters of the church-tower.

The Annual Flower Show, of course, includes an exhibition of wild flowers. Last year a girl showed a hundred and forty species correctly named, and a boy one hundred.

The parish, which lies between the New Forest and the sea, claims six hundred flowering plants, including a hundred grasses,

and the writer has no reason to think that any of them are in danger of extinction, except some marsh plants whose haunts have been drained.

Since we share a parish magazine with sixteen other parishes, we cannot devote as much space as we should like to Selbornian themes, but of course we print a Naturalists' Calendar, where the children who discover a rare plant are immortalised, and a desperate rivalry is carried on with Lyndhurst, as to which parish shall see the first swallow and hear the first nightingale.

In case this mention of rewards for rarities should trouble some of my readers, I will name as examples, the Deptford pink (a single specimen, not uprooted), the mouse-tail and blue woodruff (corn-field weeds) the Claytonia (abundant in one spot), the hare's foot clover, the penny cress, the orpine and the ox-tongue —not plants which are scarce everywhere, but happening to be rare in this particular neighbourhood.

Lastly, the writer trusts that any egotism in these remarks will be pardoned, since he records his experiences in the hope of their being suggestive to others who have similar opportunities. He need hardly say that he will be pleased to show his garden to any members of the Selborne Society who pass this way at a suitable season.

J. E. Kelsall.

Milton Rectory, Lymington.

THE MISSEL THRUSH AND IRISH YEW.

He chirrs and scolds to keep all thieves away,
With passionate tone of simulated fear
Drives off what other feasters venture near;
But all the while he plies his robber play;
He leaps and sets the yew tree plumes asway,
Then at the coral fruitage seems to tear,
Lets fall what beak o'ercharged can no wise bear,
Falls after, leaps, and flutters into grey.

There as I watch his restless greed and strife
Against all comers and the swift rebound
From earth to fruit, from fruit again to earth,
I think of those who from the Tree of Life
Keep other souls, but keeping them make dearth,
And cast food meant for angels on the ground.

H. D. Rawnsley.

NOTES ON LONDON BIRDS IN 1902.

THE thrushes in Kensington Gardens welcomed 1902 with an unusually fine chorus of song: the weather during the greater part of the year was wretched, and I do not think that at any subsequent date I heard them singing so well as on New Year's Day. On January 5, while bicycling to Richmond, I heard a chaffinch in full song near Barnes. On the morning of January 14, after a cold night, a small mixed flock of chaffinches and greenfinches was to be seen in Hyde Park, close to the bridge over the Serpentine.

During the earlier months of the year the usual numbers of black-headed gulls visited us, and stayed until they were beginning to assume breeding plumage. Considering how many hundreds of the gulls there are, it is curious how rarely one sees any but the black-headed species. On February 1, however, I saw two herring gulls in Hyde Park. A redwing was hopping about close to a shrubbery in Hyde Park on February 17, and the occurrence of a bird of this species in Lincoln's Inn Fields on the previous day was reported in *The Field*. While walking home from supper in Kensington late on the cold Sunday night of February 16, I heard brown owls hooting. I was in the Bayswater Road, and the birds must have been close to Kensington Palace. I heard an owl subsequently on the night of March 3, in Gloucester Terrace. On April 5, I found two apparently occupied nests of the carrion crow in Kensington Gardens.

The morning of April 8 was very dark and very cold for the time of year. At about 9 a.m. I walked across Hyde Park, entering at the Victoria Gate. The grass was dotted with wheatears. They were very numerous on the western side of the Park, and even on the further side there were a good many between the Police Barracks and Hyde Park Corner. It is, of course, very hard to guess the number of birds in a given area, of which one only sees part, but there were certainly not less than two hundred wheatears in Hyde Park on that morning nor can there be much doubt that there were some in Kensington Gardens, and probably a good many more in Regent's Park. These birds were merely resting in the course of their migration. In the evening, when my day's work was done, I of course returned to Hyde Park, but there was not a single wheatear to be seen.

A male redstart attracted my attention on April 10 in Kensington Gardens. He was standing huddled up at the foot of an elm tree, looking very miserable. The wind was blowing from the north with a suspicion of east in it, and it was distinctly cold. It was not until April 29 that I saw a brood of young ducks on the Serpentine; and with the exception of the wheatears and redstart already mentioned, I saw no spring migrants in London

before May, a circumstance which, though most unusual, was amply accounted for by the weather.

On May 3 I heard the reed warbler in Kensington Gardens, and on May 5 saw my first London swallow flying over the Serpentine. About this period the nights became very cold, the thermometer at the Royal Humane Society's premises in Hyde Park registering only 33° F. during the nights of May 5 and 6. On the latter day I saw a few sand-martins over the Serpentine, and on May 7 there were some swallows and one house-martin.

On May 25 my sister observed a spotted fly-catcher in Kensington Gardens, but I did not notice one till the 30th. A lesser whitethroat was singing, while rain was falling, close to the bridge across the Serpentine on June 6. The willow wren is one of the most regular spring visitors to our parks; but in 1902 I neither saw nor heard it until July 31. It was a wretched year for small birds, and they were mostly late in nesting. I found a nest of the reed-warbler near Henley in August, which contained young only just hatched, and one egg still in course of incubation. I did not see a brood of young London moor-hens until August 13. On that day, and on August 14 and 19, I heard the willow wren singing in Hyde Park, and on August 20 saw a redstart in Kensington Gardens.

On October 11 there was a pied wagtail by the Serpentine, and a sand-martin was flying about in the neighbourhood of Hyde Park Corner. A pair of Australian black swans hatched out of a brood of four young ones on October 14, their nest being on the island in the Serpentine. The keeper told me that these birds had built a nest in July, and laid five eggs, but that they had selected an unfortunately conspicuous site, and the eggs, being within the range of boys, had all been destroyed. The nest on the island had contained four eggs only. I believe this to be the first occasion upon which black swans have bred in Hyde Park, though they have done so at the Zoological Gardens, and I believe elsewhere in London. Of the four young birds hatched in October three survive: the fourth was killed by a dog at the end of November.

On October 27 there was a flock of four linnets in Kensington Gardens. During the early autumn thrushes were very quiet, but on November 1 one was singing faintly, and on November 12 there were a fair number in song. On November 17 a wren was hopping about the bridge over the Serpentine, a spot which is rarely frequented by this species. I saw a fieldfare on the morning of December 3 flying across the water in Hyde Park.

A. Holte Macpherson.

51, *Gloucester Terrace*,
Hyde Park, W.,
February 1, 1903.

HEDGE PARSLEY.

ALL along the hedge bank which borders the foot-path through the Home Field a luxuriant growth of tall plants, with fern-like leaves and spreading clusters of tiny white flowers, has hidden many of the humbler wild flowers that bloomed there early in the spring. The bank has been smoothed into shape since last year, and the blackthorns and hawthorns of the hedge were at the same time trimmed to a uniform height and thickness ; but now there are no signs of the hedger's work, and the shining leaves of the black bryony and the twining stems of the bindweeds are wound around the young twigs of the thorns. Birds have built their nests upon the bank, carefully concealing them amid the long grass and leaves of the wild flowers—a few months ago there was not enough vegetation there to hide a field mouse. There is no such thing, however, as getting rid of the hedge parsleys, and as early in the year as the beginning of February, when the woody stems of the honeysuckle were sending out their first downy leaves, the fresh green of the wild beaked parsley had covered the bank. Now it is in full bloom, and each of its thousands of tall stems is topped with flower clusters. Most of the stems are nearly a yard high ; some are even taller, and the breeze that blows across the Home Field makes them lean against the hedge and brushes off their petals against the briars. Very beautiful are the leaves of this hedge parsley, only they are so abundant and familiar everywhere that few people pause to look at them. Each leaf is made up of smooth and shining leaflets, the upper surface of which is of a rather darker green than the under side, and every umbel or head of flowers is a bunch of wild flowers in itself. The butterflies are fond of resting on the parsley flowers, and the ladybird, looking like a little, living, red jewel, climbs slowly up the hollow stems. Sometimes, on still days, a spider will spin its web between two of the stems, only to find, as soon as a breeze comes, that its labour has been in vain.

About the same time that the wild beaked parsley flowers, a somewhat smaller umbelliferous plant blooms on several sunny banks not far from the Home Field. This is the burr chervil, and its finely-cut, bright green leaves, like a lacework of the fairies, preserve their freshness all through the spring, and until they are smothered by the dust of summer. Before the elms had burst into bloom in February, the burr chervil was doing its best to hide the unsightly bareness of the banks, and now its small-flowered umbels are being succeeded by little bristly fruits. Botanists are very glad of the difference which exists between the fruits of the many kinds of hedge parsley, for if some of them were not smooth and others bristly,

some oval and others almost round, the amateur collector might well despair of identifying them. The hedge parsleys are among the commonest British wild flowers; but the great majority of people who in spring and summer ramble along our country roads and through the fields look upon them as all of one species, and never trouble to distinguish one kind from another. Frequently even country people, who have lived all their lives amid fields, lanes, and hedgerows, are as ignorant of the names of wild flowers as the most indifferent town-dweller, and when hedge parsleys are pointed out to them they merely give a glance at them, and remark, "Oh, them's hemlocks," and think they have said all there is to be said about them.

At the beginning of summer, when the hedge mustard and thistles are blooming by the roadside and on the waste grounds, and the early parsleys have run to seed, the rough chervil is the most conspicuous of the hedge parsleys. Its foliage is darker than that of the rest of the plants of its order, and until it blossoms its scantily rayed umbels droop as though oppressed by the summer heat. Presently, however, they raise themselves, and their white flower clusters become attractive to the eye, when seen amid the dull purple of the knapweeds and the pale yellow blossoms of the mulleins. A little later, when the burdocks are blooming and the wind is wafting everywhere the light-winged thistledown, another parsley, distinguished by some botanists as the real hedge parsley, displays small umbels of pale pink flowers on roadside banks and field borders. It is a very wiry plant of erect growth, and it remains in bloom until late in the autumn. About the same time that the real hedge parsley blooms, the fool's parsley may be found growing much too plentifully in neglected gardens and amid the corn. It gained its name through many persons mistaking it for the familiar garden parsley; but it is really one of the most easily identified wild flowers in our British flora. This is the plant which old Gerard described as having "a naughty smell," and most of our modern authorities on wi'd flowers agree that it has an evil odour. Some of the old herbalists, who had heard of country folk gathering the fool's parsley for the garden variety, spoke of it as a deadly plant, and instances have been quoted of its having caused delirium, stupor, and even death.

Mr. F. E. Hulme states that animals will not eat the fool's parsley, and even insects and their larvæ seem to avoid it. "We do not remember," he writes, "to have ever seen any jagged and ragged outline to its foliage, suggesting that some caterpillar has been making a meal. Our own live stock we have never tempted with it, as the risk of seeing one's animals succumbing to its effects is greater than we care for, interesting as it might be to record that a small armful killed a cow in an hour and a quarter."

Many districts in England have their own varieties of hedge parsleys, which may be looked for in vain in neighbourhoods not far removed. Such vagaries of soil preference and choice of locality are familiar to all persons who have made a study of botany, and they are not always easily accounted for. For instance, it is difficult to explain why a minute little plant should be found only along the coast of Norfolk and Suffolk, and on the summit of a Scotch mountain, and to satisfactorily account for the sudden appearance of flowers in great abundance in places where they have never been seen before. Many of the hedge parsleys, however, are common almost everywhere, and despised and neglected plants as they are, they do much toward making our waste grounds and hedgerows pleasant to look upon during many months of the year. All the parsleys belong to the Umbelliferæ, one of the largest natural orders of British wild flowers, which includes the yellow-flowered fennel, the familiar wild carrot, the spotted hemlock, the sea-shore samphire, and many common water plants. Nearly all the umbelliferous plants bear white flowers, and where they grow freely their wind-blown clusters of blossoms are delightful to behold. From the middle of April until late in autumn, and sometimes even until the end of the year, some of them are to be found in bloom by the roadside, in the fields and woodlands, or by the river-side. Often the sea cliffs are covered with their waving umbels, which rise above the pink-flowered rest-harrow and the bluish-lilac blossoms of the sea lavender, and among the meadows the rush-fringed dykes and pools are frequently hidden by their rank luxuriance. It is such familiar wild flowers as these that the casual stroller knows the least about, for he hardly ever takes the trouble to identify them. He has seen them so many times; he remembers that they grew in exactly the same places when he was a schoolboy; and it seldom strikes him that where he thinks he sees a thousand specimens of the same flower, he is perhaps looking upon half a score varieties. Yet the study of our wild flowers is one of the most fascinating that can be undertaken, and those who have once devoted a few days, or even hours, to it are seldom disposed to abandon it for other, and perhaps less profitable, pursuits.

William A. Dutt.

REVIEWS AND EXCHANGES.

My Nature Notebook. By E. Kay Robinson. Isbister and Co. Price 2s. 6d.

It is undoubtedly true, as Mr. Robinson says in the Preface to this interesting little record of a year of his life in the country, reprinted from the *Daily Graphic*, that "in every week all kinds of things happen in Nature." It was therefore a happy thought of his to set down each week's happenings; and living as he does in the country, he has thus been able to impart a freshness to his work such as no mere London casual visitor could hope to attain, a freshness too which he might have himself lost had he waited to compare one year with another, or to strike a judicial average as to Nature's doings. The brief but pithy notes, which it is perhaps unnecessary to say are thoroughly Selbornian in sympathy, are mainly ornithological, and the writer is not quite so much at home when he deals with plant-life. He seems to mistake the young fruits of the elm for flowers, and falls into the common mistake of considering the caulescent primrose as an oxlip or as a hybrid with the cowslip. It was, moreover, in the purple loosestrife, and not, as stated on p. 64, in the primrose, that Darwin described *three* types of flower, whilst if botanists had no more difficult distinction to draw than that between primrose and cowslip, their labours would be a good deal easier than they are. The book is well printed and portable, and has some blank pages for notes at the end—and a good index.

Nature and Naturalists. By the Rev. W. Johnson, F.L.S. H. R. Allenson. Price 5s. net.

There is much that is refreshingly original about this volume. We do not care for the quarto form of the volume, as the illustrations, though some of them well reflect the barren northern land of its birth, are neither numerous enough nor good enough to make it a "table" book, whilst its literary matter is certainly good enough for a better fate. The author is a Teesdale botanist, and more especially a lichenologist; and if he is perhaps a little too Kernerian in his general botany he is perfectly sane, lucid and stimulating when writing of his favourite group. The second half of the work consists of admirable little biographical sketches of Ray, Linné, White, Waterton, Kingsley, Thomas Edward, Gosse, William Mudd, J. G. Wood and Robertson of Cumbrae.

The Water-Babies. By Charles Kingsley. Illustrated by Linley Sambourne, Macmillan and Co. (Illustrated Pocket Classics). Price 2s. net.

We have been for some years in the enjoyment of two editions of the "Water-Babies," so that we can, as disposed, revel in the ethereal daintiness of Sir Noel Paton, or in the more rugged humour of Mr. Sambourne. The text is, of course, in either case, a perennial fount of delight. This new and dainty little edition, with its 100 illustrations, is remarkably cheap at 2s.; but for so treasured a classic we would recommend all who can to acquire the limp leather issue at 3s.

The Dahlia: its History and Cultivation. By Richard Dean, Robert Fife, John Ballantyne, Stephen Jones, William Cuthbertson, and Leonard Barron. Illustrated. Macmillan and Co. Price 1s.

This miniature monograph, with its imposing array of authors, gives in the compass of 120 pages a very full account of this popular group of garden flowers. The history, botany, propagation, cultivation and exhibition of the dahlia are each in turn treated by a leading horticultural authority.

Field-path Rambles: Series XXIV., comprising Routes between Whitstable, Herne Bay and Canterbury. By Walker Miles. With 17 illustrations. R. E. Taylor and Son. Price 6d. net.

We have only one serious fault to find with Mr. Walker Miles's ramble books and that is that there are not enough of them. They are almost confined to the home counties, and have not yet covered the whole area of these. We long to emulate the achievements of the late Mr. Samuel Butler, the author of "Erewhon,'

and perambulate all England, with Mr. Miles as our "guide, philosopher and friend." So, like Oliver Twist, we ask for more.

Bird Notes and News. Circular Letter issued periodically by the Society for the Protection of Birds. No. 1, April, 1903. 3, Hanover Square. Price 1s. per annum, post free, payable in advance.

We had hoped that NATURE NOTES might have become the joint official organ of the Society for the Protection of Birds and other kindred societies, as well as our own. Various difficulties, such as differing rates of subscription, having rendered this hope vain, we can only congratulate our neighbours and friends on the establishment of this periodical leaflet of their own. It does not appear very clearly whether it is to be issued monthly or at some other interval; but in any case we are sure that the members of the Society will gladly support this means of keeping them in touch with its valuable work.

Hampstead Scientific Society: Report and Proceedings, with a List of the Members for 1902. S. C. Mayle. Price 3d.

This is a model summary of the varied work of this excellently organised Society. The papers are recorded in brief abstract only, and the Report has prefixed to it a portrait of Sir Richard Temple, who was President of the Society at the time of his death.

Epsom College Natural History Society. Report for 1902. No. 14. L. W. Andrews and Son. Price 1s. 6d.

In addition to the lists of plants, insects and birds observed, records of the weather and of the growth of the boys, which under the fostering care of the headmaster have become regular features in the Reports of this Society, which is affiliated to our own, this number contains a most interesting essay on the flora of Epsom and the neighbourhood, by the Secretary, G. R. Ward, arranged according to months of flowering. We are not surprised to see that it was awarded the prize given by Sir Herbert Maxwell.

Liverpool Kyrle Society: Report for 1902.

It is impossible even to enumerate the varied forms of philanthropic activity carried on by this excellent Society. Reading in workhouses, aiding invalid children and organising entertainments for them are the objects of special branches; but one which is closely akin to our own work is that of the Flower Branch, which collects boxes of common wild flowers for distribution to Elementary Schools in the poor districts of Liverpool. More collectors are required in the north of England. The Secretary is A. S. Kelley, 8, Hargreaves Road, Liverpool.

The Parents' Review for April contains an interesting article on "The Hedgerows in April," by S. Smyth, and another of W. G. Collingwood's Fésole Club Papers, this one dealing with "The Ethics of Leaf-land."

Pearson's Magazine for April contains a paper on "The Migrations of British Birds," by H. F. Witherby, and one entitled "Do Monkeys Speak?" by Professor R. J. Garner.

The Butterflies and Moths of Europe. By W. F. Kirby. Parts 24 and 25. Cassell and Co.

With the latest issue Plate 44 is reached, the high standard of excellence of the earlier parts being fully sustained.

Received: *The American Botanist* for March; *The Humanitarian, Animal World, Our Animal Friends, The Naturalist, The Irish Naturalist*, and *Nature Study* for April.

NATURAL HISTORY NOTES AND QUERIES.

Gilbert White and Leprosy.—With reference to my note in the April issue of NATURE NOTES (No. 160, p. 64), if any of our members who live in Selborne or neighbourhood know of a case or cases similar to the one described by White, viz., marked or scaly thickening of the palms and soles, the information would oblige

77, *Upper Glo'ster Place, London, N.W.*, *April* 2, 1903. GEORGE PERNET.

Stoats.—A keeper in the North of England states that they never catch a male stoat in a white coat, but always females, and that they are two years old before they change. I thought that both sexes became ermines in the winter, but the keeper is very clear about it. A neighbour has a female that is white. What experience have others on this matter?

EDMUND THOS. DAUBENY.

Crows at Montreux.—Referring to the interesting note by my friend Captain Daubeny (NATURE NOTES, April, p. 75), when he speaks of not recollecting having seen rooks at Montreux though there were a few crows about, &c. This is practically a part of the Montreux neighbourhood and, there are numbers of what would pass well enough for rooks both here and in the adjacent Rhône Valley, with the same habits, colour, shape, note, size and flight, but so far as I have seen without the characteristic whitened beak of the home rook. This might be accounted for by difference in the soil. Their croak, or caw, does not seem to differ essentially from one of the many notes of rooks, and they may be seen in large flocks late in the evening homing towards their roosting places in the Chillon Woods, or sometimes earlier singly in the garden trees, but a few yards from my windows. All this may of course go to show that I am not sufficiently acquainted with the crow as a foreigner. Where I have known these birds best at home, they seemed more solitary and to frequent places more remote from habitations, but though they seem very like rooks I am not prepared to say that the birds I refer to here are not crows.

While reading the note referred to I wondered whether the "*choucas*" visiting the Hotel Belmont were a kind of chough which I have seen somewhere in Switzerland, but where I do not at this moment remember.

Veytaux, Vaud, Suisse, *April* 5, 1903. BENWYAN, F.G.S.

Wildfowl at Euston Park.—Ten days ago I was informed that two ruddy sheldrakes had appeared at Euston, and have just been with a brother ornithologist to see them. They are both males, and have settled down in a safe spot not far from the Hall, alas now in ruins from the recent fire. At a distance these beautiful birds remind one of the colours of a golden pheasant, and, when flying, the white on their wings, that is very conspicuous, forms a fine contrast. During flight, which is rather heavy, they make a querulous noise sounding as if it proceeded from some such instrument as a clarionet. These birds spend more time on the land than on the water, and are not as shy as the other wild fowl, permitting us to approach within about 70 yards, at which distance we obtained a good view of them with the aid of a glass, and could see their gorgeous colouring to perfection as the sun shone on them. I wish mates could be found for them.

There are unusual numbers of gadwall on the waters at Euston this spring. We saw quite 150. This is curious, for in previous years there have been but few, eight or ten only: common wild duck were in all directions, some on the water, some wandering about in the park, or in the meadows near the stream, and had all paired. The gadwall, however, flew about in companies 50 or 60 strong, and apparently had not begun to settle their matrimonial arrangements for the year. They quack like the wild duck, but rather sharper and crisper. Their colouring—and the white on their sides as they fly—distinguish them at once from that bird, and when flying the wing is more sabre-shaped than in the common wild mallard.

Market Weston, Thetford, *March* 23, 1903. EDMUND THOS. DAUBENY.

What is the Barley-Bird?—In reference to the notes hereon in the April issue (p. 74), I am pleased to see that my little "Handbook of British Breeding Birds" has been of service to Miss Caroline E. Harley. Since that manual was compiled, however, I have collected the names of four further species of British birds which are called in some districts the barley-bird, namely, the common gull, nightingale, grey wagtail, and wryneck. It *may* be that the species, in the neighbourhood of Poole, which is called the barley-bird, is, as "the Dorsetshire clergyman" surmises, the wryneck, although the note uttered, *i.e.*, "a short, sharp, 'tweet,'" leads one to suppose that it might perchance be the nuthatch, and the note of the wryneck, moreover, cannot very well be written down as "tweet." Although the siskin may for aught I know be unknown at or *very near* Poole, I have recorded it in the neighbourhood of Bournemouth during the winter and early spring. These notes may perhaps lead to the identification of the avine stranger.

St. Albans, Herts, W. PERCIVAL WESTELL, M.B.O.U.
April, 1903.

The barley-bird queried in NATURE NOTES (p. 74) is, according to Hudson in his "British Birds," a local name given to the yellow wagtail. The bird is so-called on account of its habit of frequenting the fields while spring sowing is in progress, and following the plough. In some districts it is called the "oat-seed-bird," and in Scotland the "seed-bird" and "seed-lady." The call note is a sharp and double one. This bird is common in all parts of England, but in Scotland is found only in the southern counties. It arrives in this country about the end of March and the beginning of April.

19, *Dalziel Place,* AUGUSTUS H. DUVALL.
Abbeyhill, Edinburgh,
April 9, 1903.

Earwigs.—My memo. on Earwigs in your issue of December last has resulted in quite an interesting discussion. Mr. Kirby's explanation of the origin of the name "earwig" shows the advantage of ready access to books of reference possessed by those who live in town, of which he has made full use. In "Insects at Home," Rev. J. G. Wood says that earwigs "have been the occasion of more disputes among entomologists than all the other insects put together. Some asserted that they were an aberrant branch of the Brachelytra, and allied to the common rove beetles; while others strenuously asserted that they belonged by right to the Orthoptera, and were allied, though distantly, to the cockroach. The use to which they put the forceps with which their tails are armed, furnished another fertile source of dispute; while even their popular English name was cause for abundant quarrel, one party considering the name to be properly ear*wig*, in allusion to the popular idea that they were in the habit of crawling into the human ears; and the other spelling the word ear*wing*, because the spread wing of the insect is shaped like a human ear."

EDMUND THOS. DAUBENY.

Slugs.—With reference to note on food of slugs on p. 77, it is not the inclination but the opportunity that slugs usually lack for varying their diet. The garden-frequenting species of both *Arion* and *Limax* are regular scavengers, and nothing eatable comes amiss to them. The genus *Testacella*, however, is carnivorous and feeds chiefly, if not exclusively, on earthworms.

68, *North Hill,* J. E. COOPER.
Highgate, N.

Thunderbolts.—In reply to the query of Mr. E. T. Daubeny, it may be said that thunderbolts are practically non-existent. They are to be regarded as myths and the simple offspring of popular credulity. Thunderstorms represent electrical discharges between certain clouds and between clouds and the earth. Such storms, consisting of light, sound and aqueous vapours, induce a good deal of atmospheric commotion while they last, but there are no solid bodies, suspended high in the air, which are implicated in these disturbances and liable to be dashed to the ground. It is true that objects of rather a peculiar form and appearance have often been dug out of the earth and termed "thunderbolts," but they have no claim whatever to the distinction, their origin being otherwise sufficiently accounted for. Pieces of flint, some of them the rudely formed axes of the early Britons and ancient arrow heads, have frequently been discovered and

received the imposing designation of "thunderstones." Belemnites, a fossil shell of tapering shape, found in great numbers and variety in certain localities, have been similarly looked upon as "bolts from the blue." Occasionally they are met with as iron pyrites or lumps of spar, very attractively crystallised, but in whatever form they have been petrified they are pretty certain to be regarded as the destructive missiles which Jupiter Pluvius has hurled from heaven to earth! The damage sometimes wrought by the electric spark, the occasional occurrence of globular lightning and falls of meteoric stones, accompanied as the latter usually are with loud detonations, have each in a measure, contributed to the popular belief in thunderbolts. Thus a part of the inscription on the meteorite which fell at Ensisheim, Alsace, in 1492, and is now suspended in the church there, runs as follows:—

"Close without, before the town,
The seventh of November's moon,
A stone was fallen and there it lay,
With thunder, and in open day!
Two hundred and a-half it weighed;
Its colour iron. Then they made
Procession, and 'twas hither borne,
But much by force from it was torn."

Popular beliefs die hard, and ideas once strongly impressed upon the mind are stubbornly retained in spite of the obvious contradiction which Nature herself offers to them. And so in the generations to come, as in past ages, the flints, belemnites and pyrites, whenever they are unearthed, will continue to be regarded with wonderment as veritable "thunderbolts." Perhaps there is nothing for us to grumble at in all this, for the finders of these singular stones (which are nothing but complacent, old-earth relics) will always be much excited, local curiosity will be aroused and science will never be harmed by the innocent, if mistaken, belief that the objects were discharged from the clouds amid the lightning flash and the thunderclap!

April 8, 1903. AN OBSERVER OF NATURE.

There can, I think, be little doubt that the notion of thunderbolts falling during a storm had its origin in the idea prevailing in ancient times that the destructive effects were due to solid missiles shot down, like a "bolt" from a bow, by celestial powers, or in later ages, from the clouds, a belief which would be strengthened by the fact that stones had been observed to fall from the skies concurrently with explosions, the noise of which resembled thunder. Possibly such a conceit may still linger in some quarters, for a few years ago I came across a newspaper paragraph stating that a lightning flash having appeared to strike the ground at a particular spot, a party of men were set to work there to "dig up the thunderbolt." In these days, when thunder and lightning are almost universally recognised as electrical phenomena—manifestations of energy—I should, on hearing or reading that a thunderbolt had fallen somewhere, regard the statement as a mere figure of speech, not as denoting the passage downwards of any material entity. There are many cases in which a form of expression (perhaps also a mode of thought) has continued in use after the belief on which it was grounded has passed away. Thus we still speak of the rising and setting of the sun, &c., while fully aware of the rotation of the earth. So also, when lightning has damaged a tree or a building, we are accustomed to say that it has been struck by the lightning, although there has been no "striking" in the sense of its having been violently hit by a solid body.

A writer in the "Encyclopœdia Britannica" has remarked that the term "thunder bolt" is nowadays rarely used except by poets and penny-a-liners. This is perhaps a little too sweeping. On page 456 of Professor Silvanus Thompson's edition of Guillemin's "Electricity and Magnetism" (in the course of an explanation of the figure of a tree and its branches found to be imprinted on the back of a man who had been struck by lightning while standing under a tree) reference is made to the part played by dust or other matter "in the case of the fall of a thunderbolt." I do not take this to imply that in such a case any actual thing falls to the ground, scattering the dust as a heavy stone or weight would. The author (or the translator) has simply made use of a convenient and time-honoured

phrase to denote the action of a lightning discharge between a cloud and the earth.

Certain stones and fossils have been called thunderbolts; and prehistoric stone implements have been so regarded by natives of the district, who, unable to account otherwise for their origin, have imagined them to have come from the skies. More rational is the notion of the Sioux Indians, who connect certain flintstones with lightning because they give a flash of light when struck.

Haverstock Hill, April 7, 1903. FRANCIS H. BAKER.

The Fall of Stones from the Sky.—I am sorry you have not inserted in your Magazine my short answer to Mr. Baker, as his letter deserved a reply. I should not consider the long letter of a person who calls himself an "Observer of Nature" worthy of notice, were it not that there may be some people in the world who are foolish enough to believe it. This letter is a tissue of misstatements. There is scarcely a word of truth in it from beginning to end.

This false Observer of Nature says that "Comets' tails have been observed which were directed towards the sun." This is absolutely untrue, and there is not the slightest foundation for the statement. This is misstatement No. 1.

O. O. N. says that "meteors are pretty often seen in full sunshine." O. O. N. knows perfectly well that I distinctly referred to shooting stars, which are broken-up comets. These can never be seen by day, that is, between sunrise and sunset. I made no reference to the large coloured meteors, which may possibly be seen sometimes by day. This is misstatement No 2.

O. O. N. says that showers of shooting stars were seen in the years 1798 and 1832. No one denied it. He gives no date in those years, but some of the swarm of Leonids were seen about that time. I stated that no swarm of shooting stars was seen travelling in the orbit of Biela's comet previous to the year 1872. This is O. O. N.'s misrepresentation No. 3.

O. O. N. says that "three men were about twenty yards distant and saw the Crumlin stone fall to the earth." This is untrue. There was only one man near it, and he saw nothing fall. All he saw was a cloud of dust rising from the place in the field where the stone was afterwards found. One man only, who was a long distance off, and was attracted by the explosion, thought that he saw something fall, but he could not describe what it was like. The dust which rose up must have fallen again. This man's evidence is of no value in opposition to that of the man who was only twenty yards distant and saw nothing fall. If O. O. N. had taken the trouble to read the particulars that were posted in the Natural History Museum he might have saved himself from misstatement No. 4.

It is necessary to point out that the "soil was thrown up a considerable distance into the air." This would not have been the case if the stone had fallen from the sky. The stone was lying embedded in the earth when the explosion took place. That was the reason why the soil and dust were thrown upwards.

O. O. N. says with reference to the Crumlin stone, "As though the whole neighbourhood had not been explored for other traces of fallen fragments." For weakness of argument it would be very hard to beat this. It is evident from the above that O. O. N. does not know whether the neighbourhood was explored or not. If the whole neighbourhood was completely explored, how was it that no other fragments of the stone were found. There is only one *fragment* of a stone at the Natural History Museum. Where is the rest of the stone? It must be somewhere. It is O. O. N.'s argument that is weak, not mine.

O. O. N. says that I am unacquainted with the rudiments of meteoric and cometary astronomy. He has evidently crammed his head with book learning and other people's ideas on the subject of modern speculative astronomy, and therefore he considers himself very wise. He is incapable of distinguishing between the speculative astronomy of the present day and the real science of the time of Newton. He assumes an anonymous signature for the purpose of indulging in his craving for vulgar abuse. If he had given his name he would not have dared to revel in such reckless misstatements as he has made.

Hampstead, PETER HASTIE.
March 11, 1903.

[*Tantæne animis cœlestibus iræ?* This correspondence must now cease. "An Observer of Nature" is a well-known astronomer who is admitted by all students to be a master of the subject.—ED. *N.N.*]

Dew Ponds.—In turning out a heap of old pamphlets a few days ago we found one on "Dew Ponds," which treats them scientifically. It was written and published in 1877 by H. P. Slade, and is entitled "A Short Practical Treatise on Dew Ponds, the Farmer's Summer Water Suppliers." The publishers are E. and F. N. Spon, 48, Charing Cross. Price 2s. He describes the construction of the ponds, and gives advice as to the improvement of them, and after citing several examples, says, "it is plainly demonstrated that rain is the main, if not the sole, source of the pond's supply." He gives careful observations and statistics as to rainfall, evaporation and consumption by cattle, and it seems a pity that his advice should not be more generally known and followed by owners of sheep on large tracts of downs, like those of Berkshire.

M. S. YOUNG.

SELBORNE SOCIETY NOTICES.

Council Meeting.—The usual monthly meeting of the Council will be held at 20, Hanover Square, W., on Wednesday, May 13, at 5.30 p.m.

New Members.—Andrew Pears, Esq., Isleworth; Miss Katherine S. Smith, West Dulwich; C. W. Dann, Esq., Exeter; Dr. J. Quirke, Stoke Newington; Andrew J. Lloyd, Esq., Boston, U.S.A.; D. W. B. Cockeram, Esq., Stoke Newington; F. J. Townend, Esq., Croydon; Miss Fothergill, Croydon; Miss Tollworthy, Stoke Newington; George A. B. Dewar, Esq., Basingstoke; Rev. Arthur Kaye, M.A., Selborne; W. A. Sykes, Esq., Shepherd's Bush.

Donations and Subscriptions.—The Council beg to acknowledge the following Donation: G. Rowland Blades, Esq., F.R.G.S., £2 2s.; Subscriptions over 5s.: Andrew Pears, Esq., 21s.; Phillip Marsh, Esq., 10s.; C. W. Dann, Esq., 7s.; J. H. Masters, Esq., 10s.; Fredk. Crowley, Esq., 21s.; Lady Knightley, of Fawsley, 10s.

SELBORNE SATURDAY AFTERNOONS.

Upwards of fifty members of the Selborne Society and their friends struggled through the wet to 24, Park Lane, on Saturday, March 28, to see Lord Brassey's Museum. This contains the collections made by the late Lady Brassey. On entering the building, in the upper story of which the series of specimens are housed, each member of the party was presented with a printed catalogue. The whole of the hall is lined with exquisite Indian carving which once was to be seen at the Colonial Exhibition. It is said that no two of the many panels are alike. No attempt has been made to classify the objects in any detail. The personal relics of the late owner and souvenirs of the "Sunbeam" occupy one wall case. Of the many others it is impossible to do more than indicate the most remarkable features. Perhaps the beautiful Hawaiian cloak of birds' feathers, the producers of which are now extinct, is the greatest rarity. Lovers of shells were pleased with the examples of the pearly coverings of molluscs displayed, both as specimens and as shades for the electric lights which illuminate the cases. Shell money and ornaments were there in profusion, and natural history and ethnological curiosities in great number. Mr. Potter, private secretary to Lord Brassey, explained briefly the chief features of the Museum, and a hearty vote of thanks, to be conveyed to the owner, was passed on the proposal of Mr. Wilfred Mark Wells, seconded by Mrs. Muhlberg, before the party separated after a most pleasant afternoon.

FIELD CLUB RAMBLES.

The Field Club commenced its 1903 season on April 18 by a visit to Kew Gardens. The weather was fine and a good company, numbering about 36 members, assembled. In the unavoidable absence of Prof. F. E. Hulme, the party was conducted through the gardens by Prof. Boulger, who gave a most interesting series of demonstrations at only a few hours' notice. The Rock garden was minutely inspected by the company and the habits of some of its occupants explained by the professor, who then led the party through the Palm

and Temperate houses. The peacock gave a special display for the benefit of the club, and a huge stork's nest suspended between the lower trunks of two Scots firs was noticed with some interest. Altogether a most instructive and enjoyable afternoon was spent.

FORTHCOMING RAMBLES.

May 9.—Ramble round Clandon and Newlands Corner. Train leaves Waterloo 2.22, Clapham Junction 2.33. Take cheap return tickets to Clandon, 2s. 3d. Guide, Mr. A. B. Wilkinson.

May 16.—Ramble round Epping (joint ramble with the North London Society). Train leaves Liverpool Street 2.41. Take day return tickets.

May 23.—Rickmansworth. Through the Park along the Chess Valley to Sarratt Vale, returning probably from Chorley Wood. Take return tickets to Rickmansworth. Train leaves Baker Street (Met. Ry.) 2.21 ; Swiss Cottage 2.29. Through tickets are issued from all Met. and District Stations. Guides, Mr. and Mrs. Douglas Wilson.

May 30.—No ramble, Saturday before Whit Monday.

June 6.—Hayes Common and Keston. Train leaves Cannon Street 2.22. Take return tickets to Hayes. Returning from Hayes at 8.23.

June 13.—Selborne. Proposed itinerary, which may be altered in some details in the June magazine, when all will be *definitely* arranged. Leave Waterloo about 10 o'clock, arrive at Alton about 12 o'clock. Drive to Selborne about 12.45. Visit the church. Lunch at the Queen's Arms at 1.30 sharp (3s.) After lunch visit the Wakes and Hanger. Tea at Queen's Arms (1s.). Leave Selborne about 7 o'clock. Brake, 3s. Fares, 4s. 6d. A margin of about 2s. 6d. must be allowed.

NEWS FROM THE BRANCHES.

Abinger and Shere Branch.—Professor Boulger will conduct a walk for the Branch on Saturday, May 16, leaving Gomshall Station (S.E. & C.R.) at 2 30, and using Miss Forster's house as a centre for tea. Any Selbornian other than Branch Members will be welcome to join the party if they will inform Miss Hill, Local Secretary, Abinger Hammer, Dorking, before May 9.

Bath Branch.—The following are the future excursions arranged for this year :—

May 16.—Glastonbury. Conducted by Mr. M. H. Scott.

June 6.—Annual Meeting at Warleigh Manor, by kind invitation of Colonel and Lady Mary Skrine.

June 20.—Garden Ramble at Oakwood, Bathwick Hill, by kind invitation of Mrs. Dobson.

June 27.—Vallis (chiefly geological). Conducted by Rev. H. H. Winwood, M.A., F.G.S.

July 18.—Chepstow and Tintern. Conducted by Mr. M. H. Scott.

NOTICES TO CORRESPONDENTS.

1. All communications for NATURE NOTES must be authenticated with name and address, not necessarily for publication.

2. The return of an unaccepted contribution can only be guaranteed when it is accompanied by a stamped and addressed envelope. We cannot undertake to name specimens privately, to return them, or to reply to questions by letter.

3. All communications for any number must be in the Editor's hands by the 10th of the preceding month.

4. Communications for NATURE NOTES, books for review, specimens for naming, &c., should be addressed to the Editor, PROFESSOR BOULGER, F.L.S., F.G.S., 11, Onslow Road, Richmond, Surrey.

5. For the supply of the Magazine to others than members address the publishers, Messrs. JOHN BALE, SONS AND DANIELSSON, Ltd., 83-89, Great Titchfield Street, London, W.

6. Letters connected with the business of the Society, subscriptions, &c., should be addressed to the Secretary, Mr. R. MARSHMAN WATTSON, 20, Hanover Square, W.

Nature Notes:

The Selborne Society's Magazine.

No. 162. JUNE, 1903. Vol. XIV.

OBJECTS OF THE SOCIETY.

To preserve from unnecessary destruction such wild birds, animals and plants as are harmless, beautiful, or rare. To discourage the wearing and use for ornament of birds and their plumage, except when the birds are killed for food or reared for their plumage. To protect places and objects of antiquarian interest or natural beauty from ill-treatment or destruction. To promote the study of natural history.

ANNUAL MEETING AND CONVERSAZIONE.

THE Society's Annual Meeting and Conversazione was held on Tuesday evening, May 5, at 20, Hanover Square, Lord Avebury (President of the Society) presiding. There was a good attendance, amongst those present being Sir George Kekewich, K.C.M.G., Sir John Cockburn, K.C.B., W. Whitaker, Esq., F.R.S., J. L. Otter, Esq., Prof. G. S. Boulger, F.L.S., F.G.S., Prof. F. E. Hulme, F.L.S., L. W. Chubb, Esq., and Miss Marie Corelli.

In moving the adoption of the Report and accounts for the year, Lord Avebury, who was warmly received, said the members of the Society might fairly congratulate themselves upon the past year, which had neither been an uneventful nor an unsuccessful one. Their finances on the whole were in a satisfactory condition, but no doubt, like a great many other institutions and individuals, if they had a little more money they could do a great deal more good. He hoped therefore their friends would do all they could to improve the state of the cash balance. On the whole, however, they were in a

fairly satisfactory position. They were spending less than their income, which was more than everyone could say, and they therefore could consider the year had not been unsatisfactory. The number of members was not so great as in the previous year, but the diminution was in paper members—members who were on the list, but who did not contribute much to promote the interests of the Society. If they considered the number of effective members—those working for the objects of the Society—the number was larger than ever before. Those were the true elements of success in a Society like theirs. The Field Club, he proceeded to state, had had twenty-three excursions last year, and he understood they gave great satisfaction. They had upstairs, so far as he could judge from the list before him, a most interesting collection of objects, which they would all inspect with great satisfaction very shortly. After they had done so they were promised a very interesting lecture, by Dr. Bowdler Sharpe, on Selborne.

Last year many of them saw with great pleasure the very interesting Nature-study exhibition in Regent's Park, and he thought no one could have been to it without going away with some new ideas; and he hoped there would be many others of the same kind to follow. The Natural History Societies in and around London were organising another Exhibition, not quite so large, but he hoped not less interesting, which he trusted would be opened in the course of the summer, and he thought all would agree that such exhibitions did a great deal to promulgate the principles they all had at heart, besides being most interesting in themselves.

As regards the protection of animals, particularly birds, no doubt a good deal had been accomplished during the last few years, and he did not know that at the moment there was much more to be done in the way of legislation; but he thought a great deal remained to be accomplished with regard to carrying the existing law into effect. He did not know whether all present had read the most interesting book by Mr. Pike, called "Hillside, Rock and Dale," on that subject. Mr. Pike spoke in that book as a keen observer, and he said it was not enough that local authorities should pass resolutions; they should carry the law into effect. Mr. Pike told them he had actually seen bird-catchers at work almost underneath a board warning them against catching birds, and he suggested the police should have more explicit orders and be more definitely instructed as to their duties in carrying out the law. He had said also that numbers of people visited Epping Forest on Saturday afternoons solely for the purpose of taking eggs, principally those of the nightjar, nightingale, pheasant, redstart, woodwren, woodpeckers and sparrow hawks. Mr. Pike also visited the Farne Islands, and there hundreds of beautiful kittiwakes were shot

for the purpose of adorning ladies' hats. More often than not the wounded birds were captured; their wings were then cut off, and the bird, still alive, was thrown into the sea. He (Lord Avebury) hoped that that could hardly be the case. Mr. Pike said if ladies could only see the terrible work which was only done to supply their unworthy fancies, he did not think they would be so partial to hats adorned with such "murderous millinery." The use of aigrettes, he pointed out, had been abandoned in the Army, and he was glad to see from the *Nottingham Guardian* that a League had been formed, the members of which pledged themselves not to marry any lady who wore them. That was perhaps going too far, because ladies mostly wore them owing to ignorance or want of thought. He had mentioned that subject on a previous occasion, and twelve ladies then present were found to be wearing aigrettes in their hats. This year he was pleased to say he did not see a single one. He was sure, however, that no one of those twelve ladies would wear aigrettes in her hat again. He could not hope to have the same effect on the ladies present, as they had anticipated him. He hoped all, however, would do their utmost to put an end to the cruel practice. He was informed that in 1900 one bird-catcher caught seventeen kingfishers in the Metropolitan district. One reason of the failure of legislation on the subject until now had been that the fines were so small that those who had rare birds or eggs could afford to pay the fine and snap their fingers at the magistrate. Now we had an amendment act by which the court might, in addition to imposing a penalty, order any such wild bird or wild birds' eggs to be forfeited and disposed of as the court might think fit. That important provision would go far to make the act more operative than had been the case hitherto. Then again they might congratulate themselves on the fact that all over the country more and more refuges were growing up, in which game birds and other wild birds were protected. There was no doubt that the strict preservation going on had the advantage that owing to the nests of pheasants and partridges being guarded, the nests and eggs of other birds had been protected also in consequence. He cordially approved of the work of Mr. J. E. Whiting (Hon. Sec. of the Hampstead Branch of their Society), who some time ago started a sanctuary or refuge for birds on Hampstead Heath. The London County Council, to whom they were all indebted for their co-operation in such matters, had done what they could to protect the place, and had now planted it with trees, shrubs, &c. A beginning therefore had been made. Another sanctuary, he understood, was in the neighbourhood of Ealing, and he ventured to hope that the example might be followed in other parts of the Metropolis. It was satisfactory also, he thought, that the authorities in British India had taken

steps towards suppressing the trade in birds' feathers. By the Customs Circular of 1902, the taking by sea or land out of British India of skins and feathers of all birds was prohibited, the exceptions being the feathers of ostriches and skins and feathers exported *bonâ fide* as specimens illustrative of natural history. Mr. Wallace was rather doubtful whether that had been carried into operation, and he believed that the ordinance had been suspended, but he (Lord Avebury) hoped that was not the case. The action of the authorities, however, showed that they were anxious to carry out the principles that were held by members of the Selborne Society.

Passing on to the subject of the protection of plants, his lordship remarked that such protection in and near London was more of a necessity than in the case of birds. In the case of the latter a great deal had been done, and he was inclined to think that they were increasing in numbers in the neighbourhood of the Metropolis. But he was afraid that those who lived within twenty miles of the City would agree that the more beautiful wild flowers were disappearing. That was due more particularly to children who gathered flowers for which they had no use, and then threw them away. He saw from the *Standard* of February 25, that the Devonshire magistrates imposed substantial fines on persons who came down there to gather ferns and primrose roots, and the Chairman of the Bench announced that any other person similarly guilty would be sent to prison without the option of a fine. He (Lord Avebury) would be glad to see magistrates in other parts of the country following out that example, not, of course, being too severe in the first instance. He thought the gatherers of such roots did not quite appreciate the injury they were doing. He saw two men gathering primrose roots near his house not long ago, and they were very surprised when he spoke to them, and they retorted that they thought they were in a civilised country. He pointed out that that was the very reason why they should not root up the beautiful plants growing about us.

Passing on he remarked that another interesting point about the Society had been the purchase of "The Wakes" by Mr. Andrew Pears during the last year, and that gentleman had stated he would be pleased to welcome the members of the Society on the excursion in June if he was at home.

He proceeded to express the hope that municipalities would plant more trees in the thoroughfares. It was so very pleasing in warm summer weather to walk through streets lined by trees, and he thought municipalities might well do much more in that direction than they had done up to the present time. The attention of them all had, he said, been called to Stratford-on-Avon, where Mr. Carnegie, with his great philanthropy, had

given a large sum of money for a public library. It was proposed to pull down some old cottages in order to erect a building for the library. He was not acquainted with the exact particulars, but he heard there were a great many complaints as to the proposed demolition. Miss Marie Corelli had promised to speak to the meeting on the question and he hoped to have the pleasure of hearing her. He was sure they would sympathise with her desire to preserve the town of Stratford-on-Avon as far as possible in its old condition, but he did not feel himself competent to express any opinion on the subject.

He then drew attention to the last number of NATURE NOTES in which there was an interesting article by a country clergyman—the Rev. J. E. Kelsall—as to how much a clergyman might do in any country parish to promote the interests of the Society, and how much such a Society might do to render life in a country parish more interesting and more agreeable. He wrote as a Selbornian Clergyman, but he could not help thinking that every clergyman ought to be Selbornian. The love of animals and plants and of the country was a great characteristic of the Society, and afforded intense pleasure to those capable of enjoying it, and what was more, it was an innocent pleasure, and it was a pleasure that tended to raise and refine life. It drove away feelings of envy, hatred and uncharitableness and other feelings to which all were too prone, and filled one's mind with sympathy, kindness, pride and happy thoughts.

Lord Avebury then formally moved that the Report and Balance Sheet be adopted.

In seconding the motion Sir John Cockburn expressed pleasure at the privilege of being allowed to perform that duty, more especially as he had not anticipated being asked to address a few words to the meeting. In his childish memory, he remarked, the word "Selborne" was a holy recollection. He could recall two books that were always on the drawing room table when he was a boy, and he would remember them all his life. One was the Bible, and the other was, White's "Natural History of Selborne." Lord Avebury had touched on the work of the Society in promoting Nature-study, and it must be gratifying to all members to know how much it had been taken up all over the United Kingdom. As one who assisted with the late Exhibition in the Botanic Gardens, he had to recognise the fact that their President was one of those to whom they appealed first, knowing they would receive a ready and hearty response. He had come forward at once and lent his cordial assistance, and all hoped that the Exhibition in connection with the Home Counties would be as successful as the last was, more particularly as it was distinguished as being under the Presidency of Lord Avebury, and many officers of the Society were assisting. He had always considered the

love of flowers one of the most valuable forms of education. The true lover of Nature met friends at every turn and walk in life, who spoke to him and sympathised, and harmonised with his moods. The true lover of Nature always received the kindest sympathy. To him Nature lifted the veil and revealed herself to him and to no other. He agreed that every minister of the Gospel should be a Selborne advocate. Flowers were as Longfellow described them, "The stars of the earth." He who would ruthlessly destroy a flower was in a measure only less culpable than one who would destroy life. He had seen in a newspaper a definition of spring to the effect that no one could say spring had arrived until he could plant his foot on half a dozen daisies. Such a person, he considered, had no right to see another spring. Spring added to the pleasures of life by bringing flowers for man to see their manifold beauties. There were kindred Societies to theirs, but there was no Selborne Society on the other side of the world (Australia), where he spent so many years, but they had a Society, which was in sympathy with the Selborne Society, for the protection of birds, and he had only read in the papers which arrived by the last mail, that a man was fined 25s. with the option of imprisonment, for shooting a bird known by the name of the laughing jackass.

He then seconded the motion.

Lord Avebury, before putting the resolution expressed his indebtedness to Sir John for the active and most useful part he had taken in promoting the Nature Study Exhibition of last year. It had doubtless meant an immense amount of labour to him, and although it was a labour of love, the Society was none the less grateful to him.

The motion was carried by acclamation.

Sir George Kekewich moved: "That this Meeting of Members accords a hearty vote of thanks to the retiring Officers and to the Honorary Secretaries of Branches for their services to the Society during the past year; and approves the election of Officers for the ensuing year whose names have been submitted to Members."

The work performed by the Officers, he said, appeared in the pages of the Report itself. That work had indeed been many-sided. First and foremost, as he had taken great interest in the subject, he would quote the encouragement of Nature-study. The Society had encouraged the exhibition that took place in the Botanical Gardens which was so sympathetically opened by the Duke of Devonshire, and in which he (Sir George) took some part. They were now encouraging a similar exhibition applying to the Home Counties. Nothing could be more educative than the study of Nature. That study opened the vast stores of knowledge which was at the very doors of most

of the children of this country, but the book of Nature had never yet been adequately read by them. Why should they study with dry books when they had the delightful book of Nature always open before them if they pleased to read it? The Officers during the year had been mortal foes of all the Philistinism and vandalism that existed in the country; they protected all living things, and they had established bird sanctuaries, though in his opinion the garden of every lady and gentleman should be such a sanctuary. He was pleased to say that his was. But they had yet to convert gardeners, and especially market gardeners. The Officers had done much to preserve ancient monuments, and nothing was so bad as the destruction of ancient monuments—except perhaps their restoration. To that he had a strong objection and would be extremely sorry to see the old Cathedral of Exeter restored. The Society also protected trees. He had noticed that the more beautiful a tree, the more likely it was that the Edwins and the Angelinas would carve their initials upon it and encircle them with a heart. But they soon forgot they had done anything of the sort. He remembered a beautiful tree upon which a man had carved his name. Underneath some one cut the words "since hung." He did not know if the man really met that doom, but doubtless many present would think he deserved it. He had no doubt the Officers would do their duty in the coming year as well as in the past, and then all would be satisfied.

Dr. Martin in seconding the motion said he would like to emphasise the hearty vote of thanks to the Hon. Secretaries of the Branches. If they were not up to their work the Society would run serious risks of extinction. "It is a fine day, let us go out and kill something." "Here is a beautiful old building, let us smash it to pieces." Those were the views many of our fellow citizens had at the present time. He proceeded to refer to the proposed demolition at Stratford-on-Avon, which place he had recently visited. The onus of proof rested with the authorities, and he had come to the conclusion, after making careful enquiries, that they had not made out their case. There were 8,000 acres of land in the town and yet they had chosen the one particularly sacred spot upon which to erect a free library. That was hardly what one would have expected from them. He considered it the duty of every member of the public to see that nothing we had inherited from our ancestors should be swept away without due deliberation. Miss Correlli had stood out almost single-handed against the authorities, and had succeeded in delaying the hand of the destroyers; but if the cottages were to be retained public opinion must assert itself. He hoped all present would sign Miss Corelli's appeal to the authorities at Stratford-on-Avon for delay, in order that public opinion might have an opportunity of expressing itself.

The resolution was carried unanimously.
The following were the Officers elected :—

President.

THE RIGHT HON. LORD AVEBURY, D.C.L., F.R.S., &c.

Vice-Presidents.

O. V. Aplin, Esq., F.L.S.
Prof. G. S. Boulger, F.L.S., F.G.S.
The Hon. Mrs. R. C. Boyle.
Mrs. Brightwen, F.E.S.
The Right Hon. James Bryce, M.P.
Charles Burt, Esq., J.P.
The Rev. H. E. U. Bull, M.A.
Dudley W. Buxton, Esq., M.D., D.Sc., M.R.C.P.
His Grace the Archbishop of Canterbury.
The Hon. Sir J. Cockburn, K.C.M.G., M.D.
The Right Hon. Sir Mountstuart E. Grant Duff, G.C.S.I., F.R.S.
W. Warde Fowler, Esq., M.A.
The Right Hon. Sir Edward Fry.
The Right Hon. Sir Edward Grey, M.P.
The Rev. Professor Henslow, M.A., F.L.S.
Mrs. Arthur Hill.
Prof. F. E. Hulme, F.L.S., F.S.A.
Sir Robert Hunter, M.A.
G. B. Longstaff, Esq., M.D.
A. Holte Macpherson, Esq., B.C.L., M.A., F.Z.S.
Mrs. Martelli.
Mrs. Charles Matthews.
Hon. J. Scott Montague, M.P.
G. M. Murray, Esq., F.R.S., F.L.S.
G. A. Musgrave, Esq., F.Z.S., F.R.G.S.
Mrs. G. A. Musgrave.
Mrs. Percy Myles.
J. L. Otter, Esq.
Earl Percy, M.P.
Mrs. E. Phillips.
The Rev. Canon H. D. Rawnsley, M.A.
The Hon. Lionel Walter Rothschild, M.P., B.Sc.
R. Bowdler Sharpe, Esq., LL.D., F.L.S.
The Right Hon. the Earl of Selborne.
The Right Hon. the Earl of Stamford.
W. Whitaker, Esq., B.A., F.R.S., F.G.S.
R. Holt White, Esq.
A. W. Wills, Esq.

Council.

George Avenell, Esq.
George Rowland Blades, Esq., F.R.G.S.
F. Downing, Esq., F.S.I.
Wilfred S. Durrant, Esq.
C. M. Hailes, Esq.
Basil W. Martin, Esq., F.Z.S.
Edward A. Martin, Esq., F.G.S.
C. M. Mühlberg, Esq.
George Pernet, Esq., M.R.C.S.
R. Hedger Wallace, Esq.
Wilfred Mark Webb, Esq., F.L.S.
A. B. Wilkinson, Esq.

Miss Corelli, in addressing the meeting, explained that she was present by the courteous permission of the President and Members of the Society to say a few words touching upon the widely discussed subject of the proposed desecration and spoliation of Henley Street, Stratford-on-Avon, by the local authorities of that town. There was no need to tell those present what Henley Street was, or how dear its very name had always been to the whole world. In it stood the humble birthplace of the greatest genius ever born—William Shakspeare. Along the plain and unassuming way that mighty poet of all time walked as a young child, as a schoolboy, as a full-grown man, and on one of the houses still standing near his home, and built a year before he was born (1563) his eyes must have rested many a time and oft. For centuries Henley Street had been the chief aim and end of countless pilgrimages from every quarter of the globe. Every humble student or great professor of literature had trodden its sacred ground. Poets, romancists and dramatists have met at the shrine of their devoutly breathed salutations, their silent thanksgiving to God for the genius of Shakspeare, Byron, Walter Scott, Charles Dickens, Ruskin, Carlyle, Emerson, Tennyson, and hosts of such men as those, in both the past and the present, had lingered in the old worn thoroughfare with thoughts too deep for tears. It had been to all the world of letters the very centre aisle of the Great

Cathedral of literature—the aisle in which all the earth's greatest and most famous men and women had passed, before approaching the inner shrine—that severely plain, but supremely sacred room where the eyes that saw all poesy at a glance, first opened to the light of day. Many things had changed in Stratford; many valuable old houses and historical landmarks of the Shakspeare period had been swept away for ever, owing to the lack of proper protection, but Henley Street had not changed in any very blatant or obtrusively modern manner until 1899. Then it was that the hand of the jerry builder, vandal and destroyer began to play havoc with its old world style and memory. It was in the summer of that very year that she first went to reside in the town, and before she had been there long she found, to her deep surprise and regret, that the memory of the world's greatest poet was far more likely to be belittled than glorified by those who were assumed to care for his relics. She found herself involved in a difficult struggle to insure a proper reverence for the beautiful old chancel in which is his grave. But she won the victory, and saved the chancel from the unseemly intrusion of a modern effigy which would have been entirely out of place in it. The present case was a parallel of that dispute. It was only after the strongest urging of other literary workers that she wrote a brief letter to the *Morning Post* on February 11 last, stating the proposed intention of the local authorities with regard to the famous street. Since, there had been continued discussion and some misrepresentation. It had been asserted that she, and the others working with her, had been exaggerating the value of the old cottages, and defending a property that was historically worthless. She was not, however, fighting for the cottages half so strenuously as she was fighting for the street. But there was one cottage which was built in 1563 (that date being proved by Mr. Richard Savage, the librarian at the birthplace, who had examined all the old deeds and leases extant with regard to it). Had no protest been raised that ancient building would have been pulled down by now, on the present intention of the Free Library Committee —a Committee which only consisted of three persons, viz., Mr. William Flower, the worthy brewer, who was responsible for the whole scheme, and two local builders, whose interest naturally lay in carrying out the scheme. The intention of that Committee was to actually perform the outrageous and incongruous business of fitting in that ancient building to form a part of the new Carnegie Library. Some idea of the local knowledge of things artistic might be gained from that piece of information. The Committee considered the plan was perfectly correct, beautiful, harmonious, and eminently artistic. Shakspeare's birthplace was in that street, and that was enough for one small thoroughfare. The cottages standing there were

private, unobtrusive, and altogether of a submissive and subservient type. The Carnegie Library, to be built by the painfully local gentlemen concerned "of the best design and material," was no doubt a very useful institution—so was a small-pox hospital,—but it did not agree with Shakspeare's birthplace. It was widely felt that the birthplace was enough for the birth street, and that to put up a modern free library full of cheap modern fiction anywhere near the birthplace of the greatest poet of the world would be a grotesque incongruity which would put us to shame, and would raise the laugh of scorn at our expense throughout all literary Europe. A free library could be put up in any rushed-up city in America, but a street where Shakspeare was born was a unique possession of humanity and should be left secure to itself and to the birthplace for all time. It should be said (continued Miss Corelli) that Mr. Carnegie was in no way to blame for the intended desecration. He did not select the site for the library. He left that to the local authorities, which meant—Mr. Flower, the brewer. The site was chosen because the land was cheap, and because certain economies could be effected in the lighting and heating of the Technical School which was to be connected with the Library. The name of Shakspeare was not mentioned in the discussion, nor was the peculiar sacredness of Henley Street considered. The townspeople had nothing to do with the choosing of the site. They would be glad and proud if such matters were made of truly national and not local concern. The existing Act of Parliament with respect to the birthplace was not sufficiently protective, it vested all business in the hands of certain persons acting as trustees on behalf of the nation. Every person being the donor of £100 could be a trustee, but no meeting could be considered a meeting unless five members attended. Therefore the meeting on May 9, at which only three trustees were present, was null and void. She pleaded for the preservation of Henley Street from any modern intrusion, not only for ourselves, but for all the unborn generations, that they might wend their way, as we did, down the historic thoroughfare, and find it spared from any touch of modernity. She appealed, with all possible earnestness, to secure for Henley Street a share in the national trust, so that it might never be interfered with through a scheme of merely local convenience. There was a strong force against her cause—the force of a whole brewery. It was using every possible weapon, it was using even the lampoon and the libel against her. She felt, however, that she was espousing a right cause, and even if she lost it through the brewer she would know that it would be admitted by literary opinion that she was right. National protest, if such protest could be got into the press —and it often could not—would do much: perhaps a strong appeal to Parliament would do more. There were many sites

in Stratford, and there was no necessity to choose Henley Street for spoliation in preference to less valuable sites, where a free library could be erected. She feared they had nothing to hope from Mr. Carnegie, as he had said in a letter to her that he had full faith in the local authorities—good man. The only local authority he knew, or whom he had met or conversed with, was Mr. Flower, the brewer. He said in a most vague way that the Shakspeare Society at the birthplace had thanked him for his gift. That just showed the muddle the poor man was in, as there was no Shakspeare Society at the birthplace. Mr. Flower, the brewer, dominated all the rest. Was it right, she asked, that such a possession should be governed by one or two local men, who were neither students nor lovers of Shakspeare, but merely interested in trade.

Lord Avebury said he had heard with much sympathy Miss Corelli's speech. They had heard one side eloquently expressed, and perhaps they should not commit themselves. Many, however, would doubtless consider there was good cause for her appeal for time to be granted for an expression of public opinion, and he for one, would be very happy to sign the appeal.

Before proceeding with the next business he said he would like to say how much the Society was indebted to Professor Boulger, the Editor of NATURE NOTES, who had done so much to promote the ideas which the Society was intended to advance.

In moving a hearty vote of thanks to Lord Avebury for his address and for presiding, Mr. E. A. Martin referred to Lord Avebury's multitudinous duties, and remarked that he had been doing good work in trying to get through Parliament his Bill dealing with the duties and hours of shop-assistants of this country. He thought all the Members of the Society were greatly indebted to Lord Avebury for sparing some of his valuable time and giving it to them. His lordship was a great writer of scientific books—books which were not only scientific, but popular. They appealed to those who were not purely scientific, and those who could read and understand popular science as they could not read and understand scientific books. The Members of that Society should appeal more and more to the children of the country, as the future of such a Society as theirs could only depend upon the children ; and they should teach them to have a proper appreciation of what was right and good. If the children were brought up properly they could be appealed to in the future when some of the present Members had passed away.

Mr. J. L. Otter (the Treasurer), in seconding the resolution, pointed out that a large number of strangers were present and suggested that they should no longer remain strangers, but should join the Society. The process, he assured them, was very easy, and also very cheap.

The resolution was carried with acclamation.

Lord Avebury in responding said he felt he could not do all he wished because he had so many other duties, but so long as the Society had such good officers it would not suffer much on his account. He knew he expressed the feelings of the members when he invited those who were not members to become so. He again thanked the meeting for the resolution and also offered his thanks to Miss Corelli for her interesting address, and expressed a hope that her efforts might be successful.

In the Conversazione that followed an interesting collection of land and freshwater shells was exhibited by Miss A. S. Philpott, and accompanying them were some snails' eggs and shells shown by Mr. W. M. Webb. Mr. Webb also showed some living blind worms or legless lizards. A number of pressed botanical specimens were lent by Mr. Matthew Hunt, and these were worthy of more detailed attention than it was possible to give them in the course of a single evening. Mr. R. Marshman Wattson exhibited an excellent collection of dragon-flies, whilst fish life was represented by a specimen of the curious parrot fish, and others, shown by Mr. C. M. Hailes. Madame Templeton sent for exhibition some nature-trimmed birdless hats, illustrating what can be done in this direction without the aid of feathers. Messrs Cassell and Co. sent an exhibit containing original water-colour drawings of many of the illustrations reproduced in their nature books, together with many of the books themselves. Some interesting fossils and minerals were lent by Mr. F. Downing and Mr. E. A. Martin, and the Children's department of the Humanitarian League sent some specimen lectures and natural history pamphlets.

A small loan collection of Nature photographs was one of the new features at this year's meeting, and as a beginning it held out the hope that at the next annual meeting of the Society an exhibition of Nature photographs could be arranged which would be one of the prominent features of the Conversazione. Among those who exhibited we note first, Mr. Douglas English, the author of "Photography for Naturalists," who very kindly exhibited photographic pictures of the polecat, dormouse, squirrel and harvest mouse; also about 150 slides which comprised a complete series of the thirteen indigenous British reptiles, including the successive stages of newts and Batrachians from the egg, also a complete series of British *Muridæ*, and a complete series of *Rodentia*, bar the hares, along with a selection of mammals, fish and insects. We learn that Mr. English hopes in due course to complete his series of photographs of the British terrestrial mammals on the same lines as his series of British reptiles. Generally speaking, his photographs show that he endeavours to secure pictures of his subjects in their chief characteristic attitudes and amid characteristic surroundings.

Another most interesting series of slides were shown by Professor Bentley, M.A., F.L.S., of University College, Sheffield, and among them were three telephotographs, one of a chaffinch sitting on its nest, another of a sandpiper on its nest, and the other of a rabbit outside its hole. Two photographs by Professor Bentley of the sandpiper were of great interest; the first showed a nest with four eggs on the ground, the eggs very large for the bird and very pointed, with point towards centre of nest to economise space. Large eggs laid by birds which have long incubation mean chicks well developed inside the egg and able to run as soon as hatched. The second photograph bearing out this point showed a young sandpiper from the same nest four hours after hatching. Another slide showed a cockchafer on a daisy. The insect had been caught asleep and it had been eating the daisy; and the slide was a good illustration of an insect visiting a flower to eat the flower tissues, and incidentally effecting pollination. Another slide showed a humble-bee on a wild hyacinth, and a second was an instantaneous photograph of three bees on an inflorescence of the sea-holly, both slides showing how the insects effect pollination. Mr. Bentley's slide showing a spider in its web was also of interest. The picture shows that the bulk of the web is made not in rings but in a continuous spiral, and the end of the thread is shown attached to the insect, which is in its normal position, head downwards. From a biological standpoint Professor Bentley's flower and insect slides representing the phenomena of pollination were of special interest, as these points, we believe, have not been photographed much. From Mr. William Farren, of Cambridge, came an interesting series of photographs. To members of the Selborne Society the photos of the stone curlew, showing a series of adult, young and eggs, were interesting, as Gilbert White so frequently mentions this bird. Mr. Martin also showed a series of photographs of the snipe and lapwing; and as the three birds named are, as a rule, very unapproachable, such photographs are therefore of interest. Studies of the ringed plover were also shown, the photographs having been taken at their inland breeding place in Norfolk. Mr. Martin also exhibited studies of the caterpillars of the Puss moth in different attitudes, also of the "Stick" caterpillars, including that of the Pepper moth and Thorn moth. Perhaps the most interesting features in these were the fine instances of protective resemblance of the Stick caterpillars to their food plants and the contrast between the resting attitude of the Puss Moth Caterpillar and when it is disturbed. From Mr. Chas. Reid, of Wishaw, whose name is known far and wide as a Nature photographer, came interesting albums of photographs; the subjects depicted were so numerous, however, that it is impossible to enter on them in detail. Mr. Reid's photographs are pictures containing correct representa-

tions of our animals and birds amid their natural surroundings, taken by one who has acquired the habit of studying Nature at first hand. The collection of photographs shown by Mr. A. W. Cobbold, of Stoke Newington, were of particular interest. The exhibit was chiefly in two parts; the first illustrating the eggs and nests of birds on the ground and their security and protection on exposed and open situations, as illustrated in the prints of oyster-catcher and ring dotterel for seashore birds, and those of the peewit and snipe for meadow and grass-land birds. The second part demonstrated a very interesting branch of flower study in connection with photography, as illustrated in the prints of "daisies awake and daisies going to sleep," also "Tragopogon awake" and "Tragopogon asleep and dying." From Mr. Bush. F.C.S., the Director of Technical Education, Newport, came two rarities, *i.e.*, photographs of a white starling and a young hobby hawk. Mr. W. Johnson, of Tunbridge Wells, was good enough to send a very interesting series of stereoscopic slides and stereoscope. From Tunbridge Wells also came a portfolio of prints from Miss Turner. Mostly bird photographs, they were Nature photographs of the nests and young of many varieties. The series of young red-backed shrikes may be noted as of special interest, for they showed the extreme rapidity with which a bird acquires its first plumage. The series of prints of the red admiral were also interesting, specially a print showing the front view of one just alighted with expanded wings. Two other collections completed the exhibition. From Mr. J. W. McLellan, of Highbury Grove, came photographs of Westminster Abbey as arranged for the Coronation, and a most interesting series of seascapes and moonlight scenes. Microphotography was represented by the very excellent series of prints shown by Mr. Goulton. Miss Whitmore exhibited some small branches of thorny mimosa from Bulawayo, Rhodesia, to which were attached the winter quarters of a hairy caterpillar. The creature gathers the thorns from the ground of about the same size and length, and forms them into an umbrella-shaped covering, attaching it to the living branches of vine or other plants: he enters it at the wide end and ultimately comes out at the point. There were also two mahogany beans; these pods are six inches long and two wide, containing the black beans, each adorned with a bright pink aril.

Dr. Bowdler Sharpe then exhibited with a running comment an extensive collection of new lantern slides of Selborne and the neighbourhood, and with a hearty vote of thanks to the lecturer the meeting terminated.

SELBORNIANA.

Branch Work.—There can be no doubt that among the most important work that the Society can do is the dissemination of its principles among the rising generation. To effect this more Junior Branches are desirable; but much may also be done by those consisting mainly of adults. We are glad, therefore, to learn that from the ashes of the defunct and much regretted Barmouth Branch has sprung a local Children's Selborne Society, with Mrs. Talbot as President, and Miss Owens as Honorary Secretary. The Birmingham and Midland Branch, moreover, has been doing excellent propagandist work. At Mr. Kearton's lecture at the Birmingham Town Hall on March 12, nearly 1,400 children from the elementary schools of the City were present by invitation of the Branch.

Nature Study.—The Selborne Society Prize for a Nature Study Diary at the recent Hammersmith Arts and Crafts Exhibition was awarded to Miss Nell Hirschfeld, of the Froebel Institute.

Thames Preservation.—In connection with the Port of London Bill, the Thames Preservation League, upon which the Selborne Society is represented, has presented a memorial to the President of the Board of Trade, praying that London and the riparian towns may have a preponderating voice on the Board of Conservators, that the new Board may be empowered to prevent sheep-washing in the river, to secure a right of footway along its banks, and to preserve its amenities, especially in the neighbourhood of Richmond.

Preservation of Wild Plants in Gloucestershire.—It having been proposed to establish an Association for the Protection of Wild Plants in Gloucestershire on the lines of the Devonshire Association, the Cotteswold Naturalists' Field Club referred the matter to a Committee. Their Report was as follows:—

The question before the Cotteswold Naturalists' Field Club upon which a decision has to be given, is whether it will recommend and support the formation of an association in Gloucestershire for the preservation of wild plants and ferns in the county. It has been suggested that one should be formed based upon the lines of a similar association in Devon; but there seems to be no reason why, if a Gloucestershire Association were formed, it should not follow lines of its own, in case the Devon Association were limited (as in fact it is) in the sphere of its operations. The Committee therefore consider it advisable, as the question has been once raised, to discuss the question of the protection of plants in Gloucestershire from all points of view, to see how an association, and not merely one based on the lines of the Devon Association, can generally be of assistance.

The Association in Devonshire consists of a society of which each member pays a subscription to a common fund. This fund is then used in paying a man to conduct prosecutions, in paying watchers, in circulating notices and leaflets, and in obtaining the assistance of editors of papers to give publicity to the question in general.

In order to see how such an association as is contemplated can work, it is necessary to find out—

First. What the laws of the country do towards assisting in the preservation of plants.

Secondly. What plants are in danger in the county.

Thirdly. What methods of preservation are available where such laws are deficient or inapplicable.

(1) As it stands at present the law is wholly inadequate to deal with the protection of any wild plants, rare or otherwise. Briefly, the case may be stated as follows: A man may absolutely exterminate a rare plant only known perhaps to grow in one place in England, or a man may denude hedges of any number of ordinary plants and ferns that make them beautiful, and have perhaps a money value of many pounds, yet, unless he can be proved to have done damage to the land—to the real property—even if such damage only amounts to 6d. in actual value, he cannot be prosecuted. The damage referred to consists, for instance, of damage to fences or damage by leaving large holes in the soil. A pilferer, if a man of substance (which he seldom is), might be sued in a civil action for damages, or in any case might be removed from the land if caught in time, but he cannot be prosecuted. The result is that there must be a large number of offenders in order that out of them a small proportion can be found who have damaged the land, because in most cases the removal of plants does not necessarily result in such damage. As regards the possibility of bye-laws to be made by a County Council, a notification from the Home Secretary is sufficiently explanatory of the difficulties of the case as the general law stands at present.

"*Whitehall, May* 23, 1902.

"SIR,—I have laid before the Secretary of State your letter of the 1st instant, stating that the Devon County Council desire to make a bye-law dealing with the up-rooting of ferns, plants, &c., in public places, and I am directed by him to say for the information of the Council, that he does not quite understand from your letter the precise description of the acts which it is proposed to prohibit, and he would be glad to see the bye-law in draft.

"If it is confined to cases where serious damage and disfigurement is caused in public highways, &c., there may not be much difficulty from the legal point of view in framing the bye-law, but the Secretary of State would not be willing to allow a bye-law which would be likely to injure unsuspecting poor people residing in the district, or to lead to the punishment of young children. Possibly, however, the bye-law could be restricted in its operations so as not to involve any danger of this, *e.g.*, by confining it to particular places to be indicated by notices.

"If, however, it is proposed that the bye-law should only apply to rare ferns or plants, the difficulties in framing it are likely to be greater.

"In any event, a bye-law which would prevent any person from taking one or two common ferns or plants from the roadside for his own use, would, in the opinion of the Secretary of State, be inadmissible.

"I am, sir, your obedient servant,

"(Signed) HENRY CUNYNGHAME.

"*The Clerk to the Devon County Council,*

"*The Castle, Exeter.*"

(2) As regards plants in danger of destruction or a severe diminution of numbers, they are best classified by the modes of destruction, and in all these cases it is at present only rooting-up or removal of plants that is considered and not the picking of flowers, &c.

(*a*) Plants rooted up wholesale by professional plant-stealers for selling purposes.

(*b*) Plants liable to be rooted up by trippers and villagers.

(*c*) Plants liable to be rooted up by botanists and collectors.

(*a*) Plants that appeal to plant-stealers must be obtainable wholesale and be showy and easily transplanted, and it may be stated here at the outset that they are practically only plants of this nature that the Devon Association has been able to reach. In Devon plants thus reached consist almost entirely of ferns and partly of primroses. In other words, so far the Association has only laid its hands on professional plant-stealers, and to these men practically only ferns and primroses appeal. There is a very great difference, however, between the quantity of these kinds of plants in Devon and Gloucestershire. In Devon the lanes and

banks are literally clothed with them, whereas in Gloucestershire primroses and ferns are comparatively scarce. In parts, *e.g.*, in most of the Vale, they are almost entirely absent, on the Cotswolds they are almost confined in limited numbers (and, as regards ferns, species) to the woods, and it is only north-west of the Severn that they become fairly abundant ; but even there the lanes and banks are very different to those in Devon. As a result, professional plant-stealers find far greater temptations in Devon than in Gloucestershire, and their presence in Devon certainly justifies the formation of an Association, since the many offenders enable a small proportion of them to be reached who can be proved, as already stated, to have damaged the land. However, this state of things does not exist in Gloucestershire, and an Association as the law now stands would have great difficulty in obtaining any success justifying its formation, and its feebleness would probably prejudice future efforts. Besides, as the law now stands the prosecutions do not really touch the fundamental question, or go to the foot of the matter at stake. Possibly in Gloucestershire, besides primroses and ferns, daffodils, fritillaries, and lilies of the valley might be in danger ; but it is submitted that the formation of a list must be left to the further consideration under advice to be given by the county's expert botanists.

(*b*) With regard to the plants liable to be rooted up by trippers and villagers, these include the above and others rarer locally. But prosecutions, as the law now stands, for the rooting up of a few primroses or daffodils, if at the same time this caused damage to land, would be very difficult to conduct, and would probably bring an Association into great disfavour and do more harm than good as regards the protection of plants. With regard to primroses, ferns and daffodils, if they are fairly common where such persons might happen to root some up, the damage done would be small, and prosecutions would call for a general denunciation. If the plants are not common in the particular locality where they are being rooted up, and with regard to other plants of a rarer nature which might appeal to trippers and villagers, in such cases damage would be done ; but one cannot well have a general law if it is intended that it should apply to one locality and not to another. The only remedy seems to be much as in Canada, to have special localities protected with a notice under a new law saying that plants must not be dug up, and that if they are, then, that offenders will be prosecuted. Such localities, if public, could be protected either by selection by the County Council, or by parishes, or by magisterial districts ; or, if private, landowners could apply to the same authorities for protection. However, it is desirable with regard to plants of this class also that they should come under the consideration of the county's expert botanists.

(*c*) With regard to the third class of plants—the rarest species—which are liable to destruction by botanists, these might be protected in a few places by the same methods. However, it is noteworthy that not only in Gloucester, but throughout England, as the Secretary of the Committee has been informed by Mr. G. Claridge Druce, F.L.S., such plants have received all due regard at the hands of botanists. Several species only known respectively each in one place in Great Britain, still grow well there, in spite of, or possibly owing to, collecting botanists ; nor is any case of extermination by such persons known. As an example may be cited the *Cotoneaster vulgaris*, at Orme's Head, and in Gloucestershire *Euphorbia stricta*. Still it is desirable that the law should be altered, because the mere fact of a public sanction to the protection of rare plants would inspire botanists to guard their treasures for future generations.

The third matter that the club must deal with, in order to see how an association may prove useful, is the methods of preservation available where the laws (which it is hoped will be passed) must prove deficient or inapplicable.

There is little doubt that protection by law could not be extended towards picking, unless possibly in special fields, woods and public places, not only placarded but enclosed, or having definite boundaries, as well. The future laws must therefore prove deficient in much frequented spots, because in these the continual picking of flowers and the trampling down may bring about a severe diminution, at any rate of some rare species. Spots like these, if they are to be enclosed, must be carefully demarcated by our expert botanists in the way already suggested. It is stated that care must be taken in demarcating spots, and for this reason : if too many are selected the association or club or other of the preservers

of plants may be considered pedantic, and there will be an outcry against the prevention of picking flowers. Harm is not usually done by picking, unless it is annually incessant, rough and comprehensive. For instance, the case already cited by a member of the Cotteswold Naturalists' Field Club, of village children picking all the handfuls they could of Bee Orchids on a Cotswold common, would not do much harm, although it might be better, as likely to increase the species, if it were less; and it is to education that one must look for moderation in this direction. But the continual picking about a locality much frequented by trippers might soon exterminate the species there. At the same time it must not be lost sight of that some plants, much more than others, are persistent in again appearing in a locality where they seemingly have had too rough a treatment.

The second reason why care must be taken in demarcating localities, is that the mere fact of doing so may call attention to a rare plant otherwise unnoticed. Last summer several plants of *Cephalanthera rubra* were found beautifully in flower close to a much frequented footpath on the Cotswolds, which might not have been the case had public attention been drawn to the locality.

The further remedies will be dealt with later, as they are the same as those which may be applied where the future laws would be inapplicable as distinct from deficient.

The law will prove inapplicable in a large variety of instances, chiefly resulting from civilisation, partly from natural causes. These possible modes of destruction are not always obvious, but there is usually a remedy if the cause of destruction is noticed in good time, and a list of some noteworthy instances may be of value in suggesting how persons should be on the watch for damage, and such list is accordingly given here. The examples not referring to Gloucestershire are supplied by Mr. G. C. Druce.

(1) The planting of larches in one locality in Gloucestershire and one in Oxon has entirely destroyed *Anemone Pulsatilla* in the localities.

(2) The sowing of coarser grass seed in the place of the fine turf of the Downs has destroyed the Spider Orchid in some localities. Similarly, an increase of rabbits has done much harm to orchids in other local localities.

(3) Building on Boar's Hill, near Oxford, has destroyed the site of the rare pink *Dianthus prolifer*.

(4) Quarrying has often swept rare plants out of existence, and even now damage in Gloucestershire has been done at Clifton to *Arabis stricta*, and near Chepstow to *Sedum rupestre*.

(5) Near Methuen in Scotland seagulls suddenly took to nesting, and destroyed the habitat for *Scheuchzeria palustris*.

(6) The great gale in 1895 swept down large numbers of pines at Loch Tay. Close by was the only habitat for *Calamagrostis borealis*. Saw-mills were later erected to cut up the pines, and Mr. Druce visited the locality to see if there was any danger, but as the saw mills were 100 yards away he thought the plant safe. Later, he again went, but the sawdust from the mills had been cast on the marsh and utterly destroyed the plant.

(7) The trimming of the roadside turf along Watling Street by a County Council destroyed *Eryngium campestre*, which is very rare in England, and only grew in Northamptonshire in that one locality.

Now in such cases the law is inapplicable, and the only remedies practically are to enclose such spots, or to remove the plants to a safe distance, if possible in the same locality (and certainly in the same geological or natural formation), or to keep up a stock by sowing seeds or planting seedlings. As the Cotteswold Naturalists' Field Club has for one of its objects the protection of rare plants, members should everywhere be alert to the possibility of destruction in any of the ways indicated, or in other ways. With the aid, then, of an association leave might be obtained to enclose spots (*e.g.*, a habitat for the Lizard Orchid is now enclosed by barbed wire), to obtain very interesting habitats and vest them in trustees (a small bog has been thus obtained in Oxon), to keep small wild pieces of a locality out of the influences of cultivation (*e.g.*, on the Black Hill of Cromarty there was a large marsh, the only locality for *Pinguicula alpina*. All this was brought under cultivation and drainage except one small piece, which was enclosed with a wall and is still a marsh, and a sanctum for this rare Butterwort).

The Committee, therefore, have passed the following resolutions, and submit the same to the Cotteswold Naturalists' Field Club to be confirmed by its members.

I.—That the formation of an association should be postponed until the law has been finally settled one way or the other, after its consideration by Lord Avebury (or other framer of the Bill) and his advisers this summer, and until the botanists of the county have decided what plants in Gloucestershire should be protected, and in what places in particular. That the later formation of an association would then prove most beneficial in assisting to make the laws known, in conducting prosecutions, in paying watchers, in bringing influence to bear in order to have places enclosed, in advancing knowledge on the subject of protection in elementary schools, &c.

II.—That the Club is of opinion that the law requires amending with a view to the preservation of wild plants, and that the question of detail should be referred by the framers of the Bill to the leading Natural History Societies in Great Britain for their consideration before it is brought before Parliament, and that a copy of this resolution be forwarded to Mr. G. C. Druce to place before Lord Avebury or other movers in the matter of protection.

III.—That the Club recommends that its Botanical Committee should obtain the advice of the expert county botanists as to what Gloucestershire plants require protection, and in what places, and what methods of remedy should be adopted in the different places.

IV.—The Club recommends that when an association is formed the Club shall advise it as far as possible over the district worked by the Club, and that the Club should support it and should obtain support from it in acquiring or enclosing places to be preserved or in approaching landowners or others requesting them to abstain from ruining a locality.

V.—That the Club is of opinion that the following courses are in threatened places open to botanists, and that it considers them perfectly legitimate from the point of view of science :—

(1) To transplant plants from a threatened spot to another but safe spot in the same locality, if the geological and natural formations are the same—*e.g.*, a field containing *Fritillaria meleagris* threatened to be ploughed up or built upon —remove the plants to a safe place close by ; the edge of a quarry, being worked, tumbling in and taking with it plants of *Spiræa Filipendula*, remove them further back.

(2) To save or cultivate the seed of a very rare plant, and to sow it where such plant actually grows in order to keep up a stock, and even to cultivate and to plant seedlings in the same way instead of sowing seed, *e.g.*, any plants like *Geranium sanguineum*, and *Veronica spicata*, constantly liable to be picked—save seed and sow it or cultivate seedlings, and plant them to keep up a good stock.

VI.—That at every meeting of the Club, in order to keep the question of threatened plants (and any threatened objects may be included at the same time) before it, one of the agenda should take the form of a question, "Has any member to report that any plants or objects of interest are in danger?" and of an appeal to members to keep watch.

These resolutions were adopted by the Club and have been circulated by them with a request that any resolutions passed by any kindred Society with reference to the proposed legislation may be sent to the Secretary of the Committee, W. L. Mellersh, Esq., The Gryphons, Cheltenham.

A New Opening for Selbornian Work.—A Nature Study and Recreation Committee has just been formed in connection with the Children's Country Holiday Fund, with the object, first, of interesting the children before they leave town in the animal and plant life of the country, and so making their fortnight's stay there still more pleasureable ; and second, to provide them with means of amusement while away. In connection with their first aim the Committee, of which Mrs. S. A. Barnett,

of Toynbee Hall, is Chairwoman, and Miss E. R. Philp, of 22, Lavington Road, Ealing Dean, W., is Secretary, are arranging during the next six weeks lectures or informal talks to the children at their schools, and they hope in July to gather just the children chosen to go away through the Fund into groups for special lantern lectures. What is wanted first, is volunteer lecturers in London, and second, perhaps, others in the villages to which the children are sent. A few simple words may do much good. It is easy to explain to children that they should not diminish the beauties of the country which they enjoy by scattering waste-paper, throwing away flowers, cutting initials on trees, writing their names on ancient walls or molesting wild animals; while town-bred children also require to be instructed how to look for and recognise many of the beautiful objects of interest which will be close before their eyes. Those who can help should communicate direct with Miss Philp.

SPRINGTIME.

I WAS staying in London this spring about the end of April; primroses and violets were being sold at the corner of every street, reminding me that the country must be looking its best in its fresh spring dress. I had been in town some weeks, and I now resolved to leave it for a few hours and spend at least the next day in the country.

I awoke the following morning with a feeling of delight as I remembered the pleasure I had in store for myself. It caused, however, some amusement at the breakfast table, and no one volunteered to acccompany me, for they could not understand how I could leave London with its many interests for "a stupid walk in the muddy country." Notwithstanding their remarks I started after breakfast in very good spirits, for it was a beautiful sunshiny morning, and within an hour the train left me at a pretty country station about twelve miles from London.

It was indeed a delightful scene that met my eyes as I stood near a stile overlooking some fields. These meadows with their many mounds were quite green, for the grass had already pushed up long blades, which bent by a touch from the wind like so many plumes. The slender runners of the strawberries were nearly hidden by the grass as they trailed over the mounds among the moss. The fresh green everywhere with the song of the lark overhead was quite enough to awaken a feeling of true joy in my heart.

The fields looked really so tempting that I resolved to get over the stile, and take at least some part of my walk by the fields. The sky overhead was a pale blue with only a few clouds

to dim its brightness, and although the sun shone warmly there was air enough to refresh the whole scene and keep the most fragile flower from fading. Everything around reminded me it was springtime; the raindrops from a previous shower still shone in the sunlight, and there was a sweet fresh smell of young blossoms and leaves. From an oak overhead came the sweet slender voice of a linnet, who seemed to be telling his mate of the many pleasures in store for them both.

The rosy breast of the linnet was quite distinct, for the oak tree in which he sang was as yet leafless—indeed it looked quite black compared with the green around. As I followed the foot-path I found this meadow skirted by a hedge enclosing a wood, which attracted me greatly. Primroses could be seen nestling in their leaves and moss, the violets were there, too, with their fragrant scent. I entered the wood and stooped to pick a flower; as I did so a blackbird uttered its well-known note on being disturbed. I soon discovered its neatly-lined nest, with three greenish speckled eggs in it. I became alarmed for the safety of these eggs when I perceived a hedger ditcher clearing away the rubbish from a tiny brook close by, so that the water might run uninterrupted in its course. As I approached I wondered if there were any fish in the stream. It was some time before I could distinguish the tiny minnows on account of the brown scum of spring that lined the bottom. By gazing at a stone my eyes became accustomed to the peculiar light, and I could then distinguish these tiny fish swimming in and out of the water weed. They had not yet put on their rosy dress which they assume in the height of summer, a certain proof that they are in perfect health. As I followed this stream I found it grew wider. Marsh-marigolds were in flower in the swampy parts of the brook. Very handsome did they look, contrasting grandly with the green around. A white butterfly flitting idly settled on one of these flowers near the brook and was reflected in the shining water. I stood for a moment to watch the insect as it flew from flower to flower. It soon disappeared among the underwood, and I determined to follow its example, and leave the brook's side to roam at will among the trees and flowers. It seemed to me spring was the best time of all the the year to wander in a wood. The branches had not yet become bushy, and the thistles that in the autumn will be tall and thick were yet no hindrance. Burrs did not attach themselves at every step, though the large burdock leaves were spreading fast. The nightingales sang continually, and the soft coo-coo of the dove seemed to whisper comfort and hope to me.

The beautiful wild anemones drooped their graceful heads, much too fair were they to last long on so rude an earth. They are followed by the bluebells which dye the ground with

their brilliant hue. The wood had so many attractions for me that spring morning that I found it very hard to hasten my steps. Two rabbits were at play among the brushwood, and I could distinctly hear the cuckoo's note as he flew continually from tree to tree. As I left the wood for the land, a pheasant walked majestically across my path. No doubt its little hen was sitting patiently on her eggs close by. Being on the ground the eggs are always in great danger, for weasels, stoats and rats spare neither eggs nor offspring. On entering a green lane close by I perceived a gipsy encampment, and very picturesque did they look preparing their midday meal. Their fire was kindled, and over it their kettle was hung between three sticks. A girl of about sixteen was kneeling before the fire. Handsome in the style of her race, her dark hair was hanging loosely about her shoulders, and she had a red shawl wrapt carelessly round her. The gipsies' tents looked dark like the canvass of a barge, and were dotted about on the common by the side of the lane. The coloured dresses of the women mingling with the golden furze made a very gay picture. As I continued my walk along the lane I was surprised at the quantity of life in the hedges. Sparrows were everywhere, fields and lanes alike. Chaffinches and greenfinches were also very plentiful. The thick hedge on my right was evidently a favourite resort of blackbirds. They are very fond of the spring on account of the showers, and as some large raindrops began to fall, I could hear several whistling in some elms close by. They chose these elms as there were not many oaks, for the oak is the blackbird's favourite tree.

There were some cornfields on the other side of the hedge ; up to April the birds come in flocks to feed on the newly sown grain, but then the great business of nesting begins. It is, however, only by degrees that the flocks break up. Particular pairs may have nests, and yet most of the species may be flying in packs. As I continued my walk, I could not resist passing into a copse by the side of the road, and in this retired spot I resolved to eat my lunch seated on a peeled tree, from whence arose a sweet odour of sap. I soon found I had chosen a perfect resting place. A nightingale was singing beautifully to his mate who was sitting on her nest of dry hay and leaves close by. These birds are very constant in their tastes. and I wondered how many years these two had built in this copse. I soon found that nightingales were not the only inhabitants of this place. for I saw a tiny brown mouse climbing up a blackthorn bush, perhaps for the young birds. Mice will be very plentiful as the summer advances. Everything around speaks of fresh life. A green pond in a meadow close by was full of tadpoles, and two green frogs were croaking by the side. This pond is surrounded by brambles, among which some rabbits were at play. In this meadow there was a flock of sheep ; young lambs were frisking

around their mothers. An old shepherd was crossing the field in a smock frock, with a crook in his hand and followed by his dog. The dog gathered the sheep together in very little time and began driving them towards the road, and very proud did he look of his charge. I rose with regret from my pleasant resting place and crossed the meadow, attracted by some children gathering cowslips near a hedge which joined the wood. I noticed as I crossed the field that daisies were beginning to show themselves among the grass. As I approached the children I found they were making cowslip balls. One girl had made herself a wreath of ivy, moss and primroses. I thought as I watched these children that spring's message of life and joy is better understood in childhood than in later years, for men, in their anxiety about the autumn, are often blind to the beauties of spring. I was recalled from my meditations by a tiny child offering me a bunch of violets. I made up my mind as I took them from her to walk along the bank by the field to hunt for some more of my favourite flowers. This bank was pleasantly shaded by the branches of some trees from the wood. The sunlight peeped through these branches, making a pretty variety of light and shade. The sun was already sinking in the western sky, and making the whole sky glow with gold. The days were short as yet, and some of the birds had already gone to roost, but the rabbits were still at play among the underwood. A quiet stillness crept over me as the twilight deepened, and a powerful feeling of rest came upon my soul. This stillness and power belongs exclusively to the evening, and had a strange attraction for me. This time of day seemed to influence all creation alike. The birds sang more sweetly than all through the day, and the flowers breathed forth a more fragrant perfume.

> "There is a calm, a sweetness, and a power,
> That morning knows not, in the evening hour."

Many creatures which rested during the day began to show themselves. Wood pigeons returned home and the wood was filled with their notes. The blackbird's song could be heard from time to time and also the note of the robin, while the tinkling of sheep bells in a distant field blended harmoniously with the whole. Everything reminded me evening was fast advancing with its hours of rest. I, too, was forced to think of repose, so I retraced my steps towards the station. As I passed an old farm a hen was clucking anxiously for a missing chick ; it soon came running to her call, and all her family was then comfortably settled for the night. Even the earth worms had begun their nightly rambles before I reached the station. The train at length bore me homeward, and although I was sorry to leave so much that was beautiful behind me I had stored away many a spring picture to be remembered when wintry skies and chilling winds have hushed the birds into silence and hidden the flowers from view.

A. R. Francis.

IS NATURE CRUEL?

A DECADE or two ago it was the fashion to look upon Dame Nature and her ways as perfect. She was and even now is believed to be perfectly beautiful, and hence has arisen the argument that her ways and modes of dealing with the different forms of life on the Earth are also perfect, and that she is merciful in what she does and the methods she employs.

Some people hold that it is cruel for man to take life, while Nature may do so how she likes and yet not be considered cruel. Now "cruelty" means the pitiless infliction of pain, whether of mind or body, and in that sense Nature most certainly is cruel. The numbers of the different forms of life are primarily determined by the supply of food. If the supply is short, famine thins their ranks.

At the beginning of winter many of our birds have a reserve store of fat in their bodies with which to battle against the cold, and gradually lose in condition and weight as the winter wears along. Four or five years ago redwings were so killed down by severe cold that not one was to be seen about here the next spring; while fieldfares, missel-thrushes, blackbirds, green woodpeckers, and some other birds were much reduced in numbers. Surely a lingering death after a hopeless struggle against cold and want is a cruel one.

Then a hot, dry season such as we have experienced in late years claims its victims. Many creatures died of thirst in the summers of 1898 and 1899 hereabouts. Death by thirst is by no means euthanasia.

Vast numbers of birds are lost annually in their migratory flights. They become caught in storms or fogs, and are thrown out of their course at sea. To fly about over a lonely expanse of ocean, losing their way from no fault of their own, until they become exhausted and drowned, is neither a merciful nor speedy end.

Some of our English wasps lay up a store of caterpillars or spiders for the sustenance of their young. Their victims are not killed, but are so stung as to be incapable of motion or resistance. They are then packed in cells awaiting their turn to be devoured.

There is a belief among some that moles lay up a store of worms at the beginning of winter, and I have been informed by several old mole-catchers that they keep them in captivity by biting their heads. Now and then a fresh bite is said to be inflicted on the poor worm to keep up the raw and thus prevent escape. If this habit of the mole eventually proves to be true it surely is another case of cruelty in Nature.

But of all terrible lives and deaths, those to which many insects are liable are probably the worst. The lot of the larva of

the common cabbage butterflies is a case in point. Out of every 100 caterpillars 90 or more are doomed to a living death. Ichneumon flies lay their eggs in their bodies, whence issue numerous grubs that carefully avoid their vitals and feed upon their fat. At last, when the caterpillar is "full fed," these grubs bore holes in its skin and turn it into pupæ. I know hardly any form of death to equal this. The life of an ichneumonised caterpillar must be miserable in the extreme.

But it is argued that in the sense of consciously delighting in bloodshedding or the infliction of pain Nature is not cruel.

It would be beyond my present purpose to enter at length into the large question of the degrees of consciousness of animals in their acts or doings. That many of their acts bear strong evidence of calculation or knowledge it is impossible to doubt. Lord Avebury has informed us that the brain of an ant is the most wonderful atom in the world, a statement which is fully carried out by the intelligence that atom shows. To suppose that ants who fight battles, cultivate land, capture slaves, employ domestic cattle, and keep pets, should do these things without knowing why they do them is to adopt a form of reasoning difficult to accept, and to my mind ridiculous. The theory of blind instinct has had its day. It takes a low view of the wonders of creation, for if we hold the belief that every creature save man is an automaton, and that all its acts are senseless as far as its intelligence is concerned, and that it does not know the reason either for its simple or complex acts, we soon learn to despise it as one of the "inferior" animals indeed. As I have said, we take a low view of it. We have, however, long ago been forced to allow that man is not the only reasoning creature in the world, and that many, if not all, of the lower animals are more or less conscious agents.

Most of the cat tribe are consciously cruel. They delight in playing with their prey. How often have I taken a wretched mouse from a cat and restored it dead to her to eat, thus putting an end to a fine bit of play in which she has evidently been amused.

Foxes delight in taking life. If they find their way into a hen roost they kill everything right and left. Many of the weasel tribe have the same fondness for destroying life.

Farmers in South Africa know what "baboon-handled" stock are. These large monkeys make raids on defenceless cattle, which they tear and mutilate in such an aimless manner as to lead to the belief they delight in causing pain and committing atrocities out of wanton amusement.

Some birds, aptly called butcher birds from their cruel habits, impale on thorns small birds, beetles and such like. It may be argued that it is the butcher bird's nature to do this and to delight in it, just as it is said of dogs that they "delight to bark and bite for 'tis their nature to," and because it is their nature that therefore they do not know why they bark and bite. Dogs,

however, in spite of their nature, do know why they bark, and why they bite. They bark as a warning, and if that is not sufficient they take stronger measures. Surely a dog bites a person because he knows a bite gives pain. No doubt he learned this in a practical way early in life from his brothers and sisters, and from his mother too. If any one thinks that the feline race do not know how to administer a caution as a punishment, let him take his pet cat in his lap and commence to pat it. Let the action of the hand be strengthened till the cat shows resentment, which he will do by giving a gentle nip of the offending hand, as much as to say, "please do not do it." Let a stranger attempt such liberties with the animal and he will soon feel a sharp bite that will make his hand bleed. Are we to suppose that the Australian bower bird takes no conscious delight in the pretty things with which he adorns his play place, and in the gay feathers he carries in his bill to show his mate? If we allow his acts to be conscious, we must also allow that the butcher bird acts consciously as he impales an insect on a thorn.

Struggle for existence, one of the inexorable laws by which all forms on the Earth are ruled, of its very nature implies cruelty. The powerful domineering over the weak and denying them the right to live. The rule that the weak must go to the wall holds good all the world over. There is very little standing still or idly folding the hands; forward, onward, is the general rule, and the penalty of lagging behind in Nature's race is annihilation; it is indeed *væ victis*.

Another form of the same law, the law of battle, has much the same result as the individual struggle for existence; for by it progress and improvement are ensured, and deterioration and retrogression are effectually kept in check. In each case the strongest survives.

Birds sing from two motives. The male exerts his vocal powers to the utmost so as to charm his lady-love; and the best songsters are the most successful suitors. But they also sing in rivalry with other males. One cock crows against another, challenges to mortal combat, and they then fight the matter out. They know perfectly well what they are doing and what the stakes are, and no mercy is shown to the vanquished. The fights, then, amongst male animals for the possession of the female, are consciously undertaken and deliberately cruel. The strongest win the day, become the parents of vigorous children, and thus keep the race up to a high standard.

It would be easy to multiply instances showing that the lower animals are more or less conscious agents, but perhaps enough has been said to whet the appetites of those who do not think they are, and to start an interesting discussion in NATURE NOTES.

Man, the highest of God's creatures, should never unnecessarily inflict pain on those beneath him. The merciful deer-stalker at once ends the life of the buck that has fallen to his

rifle, whilst the fisherman by a tap on the back of the head saves from suffering the trout he has taken, before placing it in his basket. "A merciful man is merciful to his beast," is a good old saying, yet how often do we see horse and ass ill-treated, and hear unfortunate dogs that are tied up to damp kennels without straw, calling out for mercy through long winter nights. EDMUND THOS. DAUBENY.

September, 1900.

BATS.

ONE of the most clearly defined orders of mammalia is that of *Chiroptera*, or bats, by reason of the modification of the arms and fingers into true wings which have the power of flapping and propelling the animal through the air. The flight of the bat is of course quite different from that of the "flying lemurs," whose "wings" are merely a kind of parachute, formed by the joining of the arms and legs with a continuation of the body. Their locomotion in the air is nothing but the effect of the air bearing them up as they leap from bough to bough. Of course it is preposterous to suppose that bats are descended from the pre-historic *Pterodactyles*, which have now, for many centuries, been extinct. The great objection to that supposition is, that the *Pterodactyles* were reptiles, and bats are mammals.

The bats number about four hundred and eighty distinct species, and are scattered all over the tropical parts of the old world. They are divided into two suborders. The fruit-eating bats or *Megachiroptera;* and the insect-eating and blood-sucking bats, or *Microchiroptera.*

Of the *Megachiroptera* the most noticeable are the fox-bats (*Pteropus*), which are so called on account of their red fox-like fur. They are the largest of the bat tribe, some of them measuring about 4-5 feet across the expanded wings. The fox-bats abound in India and Java, and effect great damage in the plantations and fruit gardens. The fox-bats, like all others, are nocturnal in their habits, and sleep, suspended head-downwards, during the day. The largest fox-bats are the Indian fox-bat (*Pteropus medius*), and the Philippine fox-bat (*Pteropus jubatus*).

Another genus of fruit eaters is *Cephalotes* or tube-nosed bats, whose nostrils are prolonged into two tubes, the special object of which has yet to be discovered.

In Africa *Pteropus* is not represented, but its place is taken by the epauletted fruit-bats (*Epomorphorus*) which have a tuft of hair on each shoulder, and the hammer-headed bats (*Hypsignathus*). All the family of *Pteropodidæ* have their teeth adapted for munching fruit.

Of microchiroptera there are about 400 species, and are, with a few exceptions, of dull colouration. Almost all feed on insects, but some on blood. The noctule (*Pipistrellus noctula*) is perhaps the most common of the English bats. It is about the size of a large mouse, and is covered with short brown fur, which is very soft and silky. It belongs to the family of *Vespertilionidæ* and is the largest of the English bats.

The "long-eared bat" (*Plecotus auritus*) is hardly less common, and as its name implies, is easily distinguished by its long ears. This bat has the power of throwing its ears into very graceful attitudes. When suspended by its feet it has a very singular aspect, its beautiful long ears are tucked away under its wings and nearly cover the body, the tragus, or pointed membrane inside the ear is then exposed, and looks like the ear itself, which gives the bat a very different appearance from when it is on the wing. The only other long-eared bat is the Australian long-eared bat (*Nyctophilus timoriensis*).

Another well known English bat is the pipistrelle (*Vesperugo pipistrellus*), which is extremely common all over England. It is smaller than the long-eared bat, being about the size of a dormouse. It has dark mouse-coloured fur and rather small ears. There are numerous different species of pipistrelles scattered over the world. The horseshoe bats (*Rhinolophus*) are found in England, but not so commonly as the noctules or pipistrelles. There are two distinct species in England, *i.e.*, the greater horseshoe bat (*R. ferrum-equinum*) and the lesser horseshoe bat (*R. hipposiderus*). Both these have very elaborate nose-leaves and ears, and the tragus is also present. Horseshoe bats are found all over India and in Europe. They are especially notable for choosing very hidden roosting-places.

Other bats with even more elaborate nose-leaves are found in Southern Europe and in Asia. The Persian leaf-bat (*Triænops persicus*) has an elaborate structure with three points at the top; but perhaps the most curious of the leaf-nosed bats is the "flower-nosed bat" (*Anthops ornatus*) of the Solomon Islands, in which the whole front of the face, save the eyes and mouth, is covered with a complex and ornate structure, forming a complete mask.

The false vampires (*Megaderma*) belong to the family of "*Nycteridæ*" and are known by their distinct tragus and tall nose-leaf. Some species may almost be called carnivorous, because they prey habitually on smaller species of Chiroptera. The African false vampire (*Megadermafrons*) is particularly noticeable on account of the habit it has of sprinkling the wings and back with a yellow powder secreted in a gland in the rump, in order to make itself look like a butterfly when on the wing, and so deceive its enemies.

The Egyptian nycteris (*N. thebaicus*) has very large ears

and a distinct tragus. It abounds around the Pyramids and ruined temples of Egypt.

The free-tailed bats, or family "*Emballonuridæ*," are so called on account of their tail being free from the membrane which joins the legs. They are chiefly found in Africa.

The principal genus is "*Taphozous*," or the tomb-bats, which, like the nycteris, are mostly found in Egypt, where there are so many tombs and excavations to receive them.

Another important genus is "*Molossus*," or the mastiff bats, so named on account of their broad, wide-mouthed muzzles and large dog-like ears. They are noticeable for having, unlike the other families, a very thick tail. All Molossi have short strong legs, very broad feet, and callosities at the base of the thumbs, while there is only a single pair of incisor teeth in the upper jaw. The hind feet have no attachment to the wings, the membranes of which can be folded away between the arms and legs, while the membrane which joins the legs can be drawn upwards along the tail. They appear to be better adapted for crawling than any other bats. They are confined to tropical and sub-tropical America.

The large Malayan "naked-bat" (*Chiromeles torquata*) takes its name from its thick and puckered skin, which is almost entirely naked, and is further peculiar in that the large first hind-toe can be opposed to the other digits.

The great family of vampire bats (*Phyllostomatidæ*) is confined entirely to tropical America and the West Indies.

All vampires are strong flyers, but present great differences in the nature of their food, some devouring insects, while some are blood-suckers. In two genera (*Chilonycteris* and *Morops*) the nose-leaf is not present, but its place is taken by chin-flaps, or lappets of skin under the chin. One of the chin-flapped bats (*Morops blainvillei*) is particularly remarkable for its bright orange-coloured fur and the delicate structure of its head, which is adorned with elaborate ears and a delicate tragus. The harmless vampires (*Vampyrus*) belong to a class of genera in which the tail (when present) perforates the membrane between the legs, and the nose-leaf is spear-shaped. The largest is the Brazilian great vampire (*Vampyrus spectrum*), which measures 28 inches across the wings, the tail being wanting. It is insectivorous. The javelin vampires (*Phyllostoma*) have a broader muzzle than the harmless vampires, and are also blood-suckers. The short-nosed vampires (*Artibeus*) seem to feed on fruit, while *Desmodus rufus*, the most famous blood-sucker, has long chisel-like incisor teeth, and pierces wounds in the skin of its victims (generally cattle) and sucks the blood as it oozes out. There are other forms of short-nosed vampires found in tropical America; but they are all much the same in their habits.

NOTES ON THE SHORT-TAILED FIELD MOUSE OR FIELD VOLE (*Arvicola agrestis*), AND THE BANK VOLE (*Arvicola glareolus*).

ON July 12 I saw one of our cats coming towards the house with a bank vole in her mouth. She gave it up to one of her kittens, which seized and ran off with it, growling like a little tiger. Noticing that it was still alive, I took it from the kitten and put it in a cage in which these animals have often been kept. It seemed quite unhurt, and in a few days some young ones were born.

On the 22nd a litter of young field voles (*A. agrestis*) were brought to the house by a boy. They were far too young to live without their dam, being yet unable to see, and were nearly cold and only able just to sprawl a little with their limbs. They were, however, already covered with fur of a yellowish-brown tint.

Though at least a week older than the young bank voles, it struck me as just possible the old vole might rear at least one of them, though she had six of her own, and, therefore, put one of the young field voles in her nest. The experiment succeeded, for all were reared and did well. Quoting from my notes under date July 26, "The young bank voles are still unable to see, but already very lively, springing wildly about in a random sort of way. Their fur is very bright and glossy, and is of a decidedly reddish tint. The young field vole begins to come out of the nest box and runs about the cage."

July 28.—Some of the young bank voles are just beginning to see, being now, I think, about a fortnight old. Before their eyes were open, they ran about quite actively when taken out of the nest, and could even find their way back into it. When disturbed in their box, they would at once scramble out in a most determined way, just as nearly full-fledged young blackbirds, thrushes and other birds do under similar circumstances. Young field voles in their nests out in the meadows act in the same way, returning to the nest as soon as all is quiet.

July 29.—The eyes of some of the young bank voles are not yet fully open.

July 30.—First noticed one of them out feeding—on a leaf of the narrow-leafed plantain or rib-grass. They are now very pretty little creatures.

August 9.—The young field vole is now very nearly as large as its foster mother, the bank vole.

On leaving home for several weeks, I was obliged early in September to give these interesting animals their liberty. The nest box containing the whole family was placed (without the cage) in a thick bed of oak leaves, under the wide over-hanging eaves of a thatched summerhouse, in a plantation, where these

little animals are numerous ; a supply of bread and seed being scattered round it.

The bank vole is a livelier and more intelligent animal than the field vole or short-tailed field mouse, and can be made very tame. For many years we have kept some of them here. My little niece had one (also rescued from the jaws of a cat at an early age) for two years, when at last a cat got at it and killed it. She could take it out of its cage and stroke it, and it would feed from the hand most readily. Other points of difference observed between these two species, while living together in the same cage, were these. The field vole is much more free with its voice than its relative, and when handled keeps on uttering its harsh, grating, chattering squeak. The bank vole is generally silent when taken in the hand, but when two old ones meet, and a difference of opinion ensues, they address each other in similar tones, each one rearing bolt upright, facing the other with fore paws stretched out in front of them as if to parry or ward off the attack of the other. In this attitude they hop round each other, always keeping face to face. But I never knew these little exhibitions of temper go much further, or a real fight take place, for they are good-tempered, peaceable little creatures. Again, the field vole appears to be less expert as a climber than the bank vole. The latter animal can easily run back downwards, along the wire top of their large cage. But I have never seen the field vole do this, though the one I lately had under observation could climb up the ends of the cage, which were made of wire.

When stretched out in running, the field vole looks particularly thick and heavily built about the shoulders, and is by no means so elegantly formed as the other species.

Both are, like the water vole, to a considerable extent diurnal in their habits. Captive bank-voles like to have a bush in their cage on which they can climb, which they do with the greatest ease and agility. These animals climb about the hedges in search of haws, of which they are very fond, and I once saw one in April, sitting high up in a hawthorn bush, and feeding on the young half-expanded leaves.

The two species under consideration usually inhabit different sorts of ground ; the one preferring meadows, clover and lucerne fields and the like ; the other old rough hedge-banks, woods, plantations and gardens. Yet I once caught a bank vole, a field vole and a long-tailed field mouse in the same run. This was in a bushy place just outside a plantation. The skill and more particularly the rapidity with which the nest of this and other small rodents is made has often surprised me. A handful of raw material—hay or dead grass pushed into the nesting box—is in a remarkably short time fashioned into a neat, compact, globular nest, rough on the outside, but beautifully soft

within, from the splitting of each stem or blade into small shreds by the builders' teeth. There are often two or three tunnel-like entrances, according with the openings in the box. Though the bank vole is by no means so ready to bite when handled as the house mouse or long-tailed field mouse, yet in this instance the dam always snapped at a finger introduced into her nursery, as if determined to defend her young ones. The young bank voles begin to eat and become independent of their mother at an early age. I have often taken very young ones from cats, and they have thriven well in a cage.

If kept strictly clean and properly attended to, scarcely any smell is perceptible from these little animals. They drink very frequently. Mine have usually been fed on brown bread, canary seed, maize, haws, hips, apples, chestnuts and the like, and for green food, of which they eat a great quantity, grass, plantain, sowthistle, groundsel, dandelion and many other plants. They will do well on bread, fresh grass and water, but no doubt appreciate and prefer a more varied diet.

Blaxhall, Suffolk. G. T. Rope.

THE CHIFF-CHAFF'S RETURN.

Merry madcap minstrel, have you come again ?
Come from Asia, Africa, Italy and Spain ;
Talking all the languages of the wide world's zone,
But in England's April speaking only one—
Praise to Him Who watches you tenderly above,
Thanks for rest, and hope of nest and little ones to love :
From the topmost branches of the budding tree,
Touching all the trembling air into ecstasy.
Saying, in the brown wood leaves will soon be seen,
Elms will flush to purple, purple pass to green ;
Telling us the white lambs soon will frisk about,
Celandines will flash their rays, daffodils shine out,
Cuckoos down the valley call, clearer and more clear,
Crakes perplex the meadow-grass, swallows flicker near.
Merry madcap minstrel, through the sun and rain,
Thrilling, filling all our hearts, welcome once again !

April 5. H. D. Rawnsley.

REVIEWS AND EXCHANGES.

Country Rambles. By W. Percival Westell. With an Introduction by F. G. Aflalo. Illustrated with Photographs taken direct from Nature by J. T. Newman, and from Drawings by Arthur Martin. Henry J. Drane. Price 10s. 6d.

We admire Mr. Westell's courage. In spite of some strongly worded protests of late against Nature-diaries or calendars, or other collections of "unreasoned" observations, he gives us here, in a handsome volume adorned with about 130 illustrations, mostly photographed direct from Nature, not only a diary but that of one year only. Personally, though we prefer the compared and averaged results of many years' observation in a more condensed form, we cannot for a moment agree that these unsystematized records of first-hand outdoor observation are not of great value. Mr. Westell has furnished his book with a copious index, so that, though printed in crude diary form, it is easy to refer in it to notes on any topic on which one may be seeking information. The title is hardly sufficiently comprehensive, since visits to the "Zoo," or the annual meeting of the Selborne Society, or notes on old books, are hardly "Country Rambles." We feel sure that many naturalists will take pleasure in comparing, in other years and in other counties than Hertfordshire, their own observations with Mr. Westell's for 1900. Mr. Arthur Martin's drawings are reminiscent of Bewick, but are more spotty and scratchy than the works of the great master. Though very faithful to Nature, he has not yet fully mastered his medium. We have nothing but praise for Mr. Newman's beautiful photographs, though too often, alas, there is no direct reference to them in the text.

Field-Path Rambles in East Surrey. By Walker Miles. R. E. Taylor & Son. Price 6s. net.

This very handy buckram-bound volume includes Series 9-12 of Mr. Miles's well-known guides, with an Introduction by Mr. L. W. Chubb, of the Commons and Footpaths Preservation Society, railway sketch-maps, numerous additional illustrations, some of which we hope to reproduce at some future date, and which include one of the wonderful fresco Inferno in Chaldon Church, a full index of places, and some blank pages for the rambler's own notes. Though over six hundred miles of rambles are here minutely described, each ramble starts from and ends at a railway station, and loop-lines and alternative routes are so cleverly arranged that, though the same path is hardly ever traversed more than once, the capacities of both good and bad walkers are alike considered. We hope soon to see other sets of series gathered in this manner into volume form.

Alpine Flora for Tourists and Amateur Botanists. By Dr. Julius Hoffmann. Translated by E. S. Barton (Mrs. A. Gepp). Longmans. Price 7s. 6d. net.

This inexpensive work seems to us to be admirably adapted to its purpose. It contains forty coloured plates from water-colour drawings by Hermann Friese, comprising 250 figures of the more conspicuous flowers and ferns of the Alps. Though over-coloured these are quite recognisable ; they do not overlap ; and they are in systematic order. They are accompanied by brief descriptions with the scientific and generally the German local names, habitat in general terms and date of flowering. There is a sufficient glossary and a full index. We do not quite see the necessity for setting out the authorities for the names at length in a work of this character, and we should have been glad to see a few of the French and Italian local names as well as the German. Though it is neither small nor light enough for every knapsack, no party of tourists to Switzerland should go without a copy of this book.

A Beautiful World: The Journal of the Society for Checking the Abuses of Public Advertising. No. 9. May, 1903. 1900-1903. Messrs. John Bale, Sons and Danielsson.

More than three years have elapsed since the Society with whose aims all Selbornians must heartily sympathise, issued a number of their Journal, nor do they seem to have had any public meeting since February, 1901. Nevertheless, the

council, which meets quarterly, has naturally a good deal to record ; and, in spite of much of that disheartening slowness of apparent progress that chills all our work, this volume of 134 pages has in it much of encouragement. By an amusing *lapsus calami* Sir William Richmond becomes (on p. 109) Sir William Redmond !

Four Old Irish Songs of Summer and Winter. Edited and translated by Kuno Meyer. David Nutt.

This pamphlet of 27 pages is a remarkable one. Four old Irish songs, belonging probably to the end of the ninth or the beginning of the tenth century, are printed with an English translation, glossary, notes, and preface by a German scholar at Halle, and published in London. The following opening stanzas of the translation of the song in praise of May-day are interesting considering their antiquity :—

" May-day, season surpassing !
Splendid is colour then,
Blackbirds sing a full lay,
If there be a slender shaft of day.

" The dust-coloured cuckoo calls aloud :
Welcome, splendid summer !
The bitter bad weather is past,
The boughs of the wood are a thicket.

" Summer cuts the river down,
The swift herd of horses seeks the pool,
The long hair of the heather is outspread,
The soft white wild cotton blows."

Proceedings of the South London Entomological and Natural History Society, 1902. With two plates and a chart. Price 2s. 6d.

Though one or two of the papers deal with foreign natural history, this substantial number contains a goodly amount of valuable local matter, notably life-histories of *Acidalia marginipunctata* and *Argulus foliaceus*. Nine field-meetings are also fully reported.

Report of the Rugby School Natural History Society for 1902. (Thirty-sixth issue).

This now venerable society has not only Botanical, Entomological, Zoological, Geological and Meteorological, but Photographic, Architectural, and Physical Sections, though their numbers do not appear to be great, considering the size of the school. This report contains, besides the usual lists, illustrated papers on the Tertiary Rocks of the Hants Basin and Small-power Machinery.

Received : *University of Colorado Bulletin*, vol. ii., No. 4, *Quarto-Centennial Celebration* ; *Butterflies and Moths of Europe*, by W. F. Kirby, F.L.S., parts 26-28 *The American Botanist* and *The Victorian Naturalist* for April ; *The Naturalist*, *The Irish Naturalist*, *The Humanitarian*, *The Animal World*, *The Animals' Friend*, *Our Animal Friends*, and *The Agricultural Economist* for May.

NATURAL HISTORY NOTES AND QUERIES.

Sexes of White Stoats.—The curious experience of a North of England gamekeeper, mentioned by the Rev. E. T. Daubeny (NATURE NOTES, May, p. 95), accords precisely with what an Ipswich bird-stuffer (a good naturalist and very observant man) told me this spring, viz., that all the white or nearly white stoats he had stuffed had been females. That the seasonal change of colour in this animal should be confined to one sex seemed to me at the time so remarkable and unlikely a thing that I supposed it to be entirely due to a singular chance that no white males should have passed through his hands.

It would be interesting to know whether the same thing has been noticed elsewhere.

Blaxhall, Suffolk. G. T. ROPE.

A Feline Angler.—As it is a general idea that cats have a great objection to putting their feet in water, it will perhaps be interesting to know that, where fish is a bait, this objection is overcome.

A cat of mine is very fond of catching the small and seemingly unattractive fish in the river Thames. He is a large silver-grey tabby, a very handsome specimen of his kind. On bright days he may often be seen sitting in our boathouse watching the ebb and flow of the water, now and then eagerly dipping his paw into the shallow pools left behind the landing stage, and thus he secures the poor belated fish he finds stranded there. These fish, as far as we know, are small roach and dace. "Moses," who is now a most expert angler, will amuse himself for hours with this sport until the tide has gone down and left the pools dry. He then returns to the house and turns up his nose (which, by the way, is a lovely terra-cotta colour) at the dainty morsels of food we may offer him which have quite lost their charm.

"Moses" will sometimes accept the fish the cook prepares for him, and is not averse to a stray bird he may catch in the garden, but I think he much prefers the tiny fish he gets on his own account when he thinks no one is watching him.

ELENA CLARKE.

Shrews.—Our rural postman asked me, a couple of weeks ago, when we had rather severe frosts, why it was he saw so many dead "shrews" on the road? He said he asked some old people about it, and they said "a shrew can never cross a road." I scarcely believed that, and my explanation was that if he had searched the grass in the fields he would have found just as many. They came out rather soon and were killed by the frost. Am I right?

Charnwood Forest, W. R. T.
May 2, 1903.

Spare the Birds.—The *Illustrated Scientific News* for May gives the following interesting note, taken from a recent publication devoted to the interest of planters in the Southern United States: "In a single day the stomach of a quail contained 101 potato beetles, and that of another quail 500 chinch bugs. A yellow-billed cuckoo shot at six o'clock in the morning contained 43 caterpillars, and another cuckoo 217 web worms. A robin had eaten 175 caterpillars and the stomachs of four chickadees contained 1,028 eggs of the cankerworm. Four others contained 600 eggs and 105 mature insects, and it is said that a single chickadee will eat 5,000 eggs of this worm in a day. It has been estimated that a barn swallow will destroy from 5,000 to 10,000 flies and other insects every week. In the crop of a dove were found 7,500 weed seeds."

Chickadee is the popular name of the American black-capped titmouse, *Parus atricapillus*.

Carlyle Lodge, CHAS. E. J. HANNETT.
Canonbury Place, N.
May 8.

Trays for feeding birds.—I have a wooden tray tied by a string at each end to thin pliable sticks four feet high, on which food is placed for the birds in hard weather. To this robins, tits, and a few other birds freely resort, but sparrows will not venture owing to its unsteadiness, although they feed readily enough on the ground beneath. Long-tailed field-mice climb the sticks and down the string to the tray night after night. They also attack cocoa-nuts suspended by string on sticks. Next winter I shall try thin brass wire instead of string, which I think will checkmate the mice.

Market Weston, Thetford, EDMUND THOS. DAUBENY.
May, 1903.

Crows at Montreux.—I notice from some remarks at p. 95 of your May number that the identity of the *Chocard des Alpes* referred to at p. 75 of the April issue is not generally recognised by your readers. Not only does the description leave no room for doubt as to the species, but I have myself seen the birds about the higher hills above and behind Montreux. It is the common Alpine Chough, *Pyrrhocorax alpinus*.

This species may be readily distinguished from our mis-called "Cornish" Chough by its yellow and comparatively shorter and straighter bill.

The Alpine species is a nice bird, but is not so striking in appearance as our splendid Red-billed Chough.

Captive specimens are not infrequently brought to this country.

26, *Cromwell Grove*, *London, W.* — REGINALD PHILLIPPS. *Hon. Sec. Avicultural Society.*

Dropt Eggs.—Will you kindly throw some light on the following: On the closely cut lawn in front of my house, the haunt of many blackbirds, thrushes and starlings, &c., &c., we have during the last few days found eight or nine starling's eggs quite fresh and uninjured. Is there anything in this cold season which causes them to lay on the ground? I have lived here eighteen years and never saw the like.

May 9. — ZENO.

Unusual Nesting Places.—The following instances of unusual nesting places have just come under my notice. On the 29th ult. my brother noticed in the top of an ash tree a nest which appeared to him likely to be a crow's. When he had climbed the tree he found instead that the nest contained two young owls. The nest was open: which species of owl would this be likely to be?

On the same day he discovered in the hollowed arm of an old oak, and about ten feet from the ground, a wild duck's nest full of eggs. This was situated about four hundred yards from any water. It would be interesting to know how in cases of this sort the young birds reach the ground; for it is not to be supposed that they remain in those cramped quarters until they are large enough to use their wings.

Loyaton Hall, Newport, Salop, May 7. — S. A. H. BURNE.

Pike and Geese.—On Sunday, the 10th of this month, I was sitting on the bank of the lower of the Penn Ponds, Richmond Park, watching the few birds which were there. Amongst others, there was a little flock of Canadian geese. They were very lazy, and some half-dozen of them were practically asleep in the middle of the pond. Suddenly a great splashing and cackling attracted my attention. One of the birds seemed as if he were attacking another one, but to my astonishment the next instant a pike, I should say of some ten pounds in weight, jumped out of the water in their midst. He seemed to have bitten in the leg the one that had attracted my notice, as the bird at once made for the nearest island, his neck outstretched and trumpeting in the most alarming way. Can any of your readers relate a similar experience?

May, 1903. — A. S. GODFREE.

Rare Plants.—I see that your correspondent, the Rev. J. E. Kelsall, mentions the mouse-tail (*Myosurus minimus*) and the American *Claytonia* as rarities near Lymington. It may be interesting to him and others to know that both of these have been observed this year for the first time at Oxshott, Surrey, by the members of the Epsom College Natural History Society.

Wilson House, Epsom College, May 3, 1903. — G. R. WARD.

Smoke and Vegetation.—The effect on vegetation of the smoke of London and other great cities is but too painfully evident; nevertheless our knowledge on the subject greatly lacks precision. It has occurred to me that the Selborne Society might inaugurate a very interesting and valuable research somewhat on the following lines. The members of the Society (and all Field Clubs or like associations might be invited to help) should record the nearest points to London at which certain common plants, known to be highly susceptible to smoke, now exist. These should be marked upon a map and each record dated. The survey should be completed within two or three years, and then repeated after the lapse of ten or twenty years. I should anticipate that the limiting ring round the city would not take the form of a circle, but rather of an ellipse, since the prevalent winds E.N.E. and W.S.W. draw the smoke further in the W.S.W. and E.N.E. directions respectively than into the other quadrants. I am disposed to

think that lichens would be the best plants for the purpose, and preferably arboreal lichens, though wall lichens and ground lichens might also be noted. My object in fixing on lichens is three-fold: (1) I believe them to be highly susceptible to smoke. [Their place near London is usually taken by the bright green slime, *Protococcus viridis*.] (2) The presence or absence of tree lichens is very readily determined. (3) The distribution of lichens is not affected by the raids of destroying trippers in the way that ferns and many other plants are. Obviously, other plants might be chosen, and surveys for each might be concluded in the course of the same expedition. The bicycle would be indispensable.

Twitchen, Morthoe, G. B. LONGSTAFF.
R.S.O., Devon.
May 4, 1903.

Double Lady's Smock.—In two localities near here, at Hythe and on the road to Hursley (where Keble lived), I have found the double variety of ladies' smock, *Cardamine pratensis*. This year it is very vigorous and remarkably proliferous.

9, *Cavendish Grove, The Avenue, Southampton.* H. JOHN BEESTON.
May 10, 1903.

Fox Moth.—Many years ago I lived near the late Mr. Wm. Buckler, whose drawings of Lepidoptera in their different stages have never been excelled, and hardly ever equalled. We often used to meet. One day, in speaking of the fox moth (*Lasiocampa rubi*), he told me of the difficulty there was in rearing it. Full-fed caterpillars are easily obtained on any heath in the autumn; and the usual plan was to imprison them with some leaves and dry earth in a box for the winter, when nothing more was needed till they turned to moths. But the caterpillars always died in a mysterious manner during hybernation, only 3 or 4 per cent. coming out, and most of these with shrivelled wings. Armed with these facts, I determined to try a different plan, and to copy Nature's method as closely as possible. On the slope of my lawn I placed a square hand-glass, used for raising seeds, which I let into the turf about two inches, carefully stopping all egress by pressing down the ground inside and out; and put within some full-fed fox-moth caterpillars. In a short time they hid up for the winter. Their arrangements were of the simplest kind. They merely cleared a space at the root of the grass rather less than the size of half-a-crown, in which they curled up, the long hairs of their body alone preventing actual contact with the bare earth. Next spring they appeared again for a short time and basked in the sun, refusing all food. They then returned once more, spun a loose almond-shaped cocoon about the beginning of May; nearly all appeared as perfect insects. The secret was this: The juices in the bodies of those in the boxes became exhausted from their being kept too dry. Mine did not lose weight from lying close to mother earth.

May, 1903. EDMUND THOS. DAUBENY.

Oysters and Typhoid.—I lived for nineteen years at the head of Langstone Harbour, near Emsworth, whose oyster beds are reported to have been the cause of much typhoid and death, and have spent many an hour, day and night, among the mud banks there, which when the tide is down are not covered with water. Marine plants of different kinds grow luxuriantly on the mud, which in places is very deep and treacherous. In hot weather this vegetable matter lies sweltering in the sun, and when it decays gives off an offensive odour like an open drain. I have known many severe cases of gastric trouble caused by eating mussels taken in the waters of these harbours. The fishermen looked on them as poisonous, though mussels from the open sea are less harmful and often eaten with impunity. May not the germs of typhoid exist not only in the sewage flowing over the oyster beds, but also be lurking in every square yard of mud, unless it is always under water and in a tideway?

EDMUND THOS. DAUBENY.

Polar Thunder—In reading Harriet Martineau's "Feats on the Fiord" the other day, I came across the following footnote:—

"Erica knew thunder only by report, as there is none so far north as the part of Nordland where she lived. Thunder ceases at 66 degrees of latitude."

I should be pleased if anyone can give me an explanation why thunderstorms are restricted to the tropical and temperate zones. An "Observer of Nature," on p. 96, says that "thunderstorms represent electrical discharges between certain clouds," &c. If this is the case, why then does this not take place between the clouds in polar regions?

Dalziel Place, Edinburgh. AUGUSTUS H. DUVALL.
May 20, 1903.

SELBORNE SOCIETY NOTICES.

Council Meeting.—The usual monthly meeting of the Council will be held at 20, Hanover Square, W., on Wednesday, June 24, at 5.30 p.m.

New Members.—Miss Bolton, Oakamoor; Capt. Ronald B. Campbell, Bedford; W. Reed Williams, Esq., Harrow; Ed. T. Agius, Esq., Hampstead; C. D. Hailes, Esq., Hampstead; W. T. B. Young, Esq., W.C. District P.O.; B. A. Smee, Esq., Putney; Archibald R. Dick, Esq., Hampstead; James Moore, Esq., Weybridge; Allen S. Walker, Esq., Cambridge Street, W.; W. J. Crampton, Esq., Beech; Miss S. Dexter, Hampstead; Mrs. Diggle, Birmingham; Mrs. Herbert New, Edgbaston; J. Udall, Esq., F.G.S., Birmingham; J. W. Oliver, Esq., Harborne; Mrs. Gladstone, Edgbaston; Alfred Hayes, Esq., Edgbaston; W. F. Haslam, Esq., Edgbaston; C. S. Nicholson, Esq., F.L.S., Crouch End; Miss V. E. Oates, Castle Hedingham; Miss Hunt, Croydon; Miss Jessie C. Cunningham, Blackheath; S. Melville Banker, Esq., Bounds Green; Tunbridge Wells Nat. Hist. Soc. (per W. B. Trollope, Esq.); Wentworth Sturgeon, Esq., King's Bench Walk; Albert E. Morran, Esq., Plumstead; Henry Irving, Esq., Horley.

Donations and Subscriptions.—The Council beg to acknowledge the following Donations:—Mrs. E. Phillips, 10s. 6d.; Sir Jas. Colquhoun, Bart., 25s.

Subscriptions.—Mrs. Travers Buxton, 10s.; Mrs. Gladstone, 10s.; C. Burt, Esq., 10s. 6d.; H. Campion, Esq., 10s.; G. E. Barron, Esq., 10s.; Dudley W. Buxton, Esq., M.D., D.Sc., 21s.; Mrs. and Miss Broomhead-Calton-Fox, 20s.; G. S. F. Manton, Esq., 10s. 6d.; E. S. Morphew, Esq., 21s.; Mrs. Dymond, 10s.; R. M. B. Otter-Barry, Esq., 10s.; S. G. Huntley, Esq., 10s.; Mrs. F. C. Jones, 10s.; M. Pole, Esq. (1903-4), 20s.; Lady Jenkyns, 10s.; Wentworth Sturgeon, Esq. (1903-4), 21s.; Rev. C. F. Russell, 10s.; M. J. Teesdale, Esq., 10s.; Mrs. Wolrych Whitmore, 10s.

NEWS FROM THE BRANCHES.

Birmingham and Midland.—The Annual Meeting was held on Wednesday, April 29, in the Council House, Birmingham, Alderman G. J. Johnson presiding. The Hon. Sec. stated that the Branch had made satisfactory progress during the year, and that the number of members had increased. The Treasurer's account showed a small balance in hand.

Clapton (Lower Lea Valley).—The final meeting of the Session 1902-3 was held on Saturday, April 18, at Sigdon Road Board School, when a paper was read by Mr. Geo. H. Wattson on "Reptiles." The paper was illustrated in an interesting and unusual manner by *living* specimens (snake, lizard, &c.) as well as preserved, from Mr. Wattson's own collection.

FIELD CLUB RAMBLES

Northwood.—In genial weather and bright sunshine a goodly number of Selbornians (many of them being new members) enjoyed a most delightful ramble on Saturday afternoon, April 25, under the able guidance of Mr. J. E. Whiting. Starting from Northwood Station, the lovers of Nature were quickly on the look-out for the wild flowers growing around in hedge and ditch. The shrill whistle of their guide brought many to his side; he had discovered a

thrush's nest in the furze bush with three young birds in it, and there was ample opportunity to observe how very generous Nature is to young thrushes in the way of mouth. Several other nests were found during the ramble, including those of the blackbird, chaffinch and robin, all containing eggs in varying numbers. The wild flowers viewed included Cowslips, *Stellaria Holostea*, Lesser Celandine, Wild Arum, Goldilocks, Periwinkle, Red Rattle, Ground Ivy, Herb Benet, Wood Spurge, Wood Sorrel, Wild Cherry, and Sloe. Tea was served at "Ye Olde Greene Manne" at Betchworth Heath. Mr. Wilfred Mark Webb, F.L.S., made a few remarks upon Nature-study, pointing out how much more was to be gained by going out into the fields and observing Nature, and then confirming what had been seen by reference to books rather than by trusting to book reading only; and stated as a fact that boys and girls in Board Schools who were taken out for weekly rambles into the country became much better fitted to battle with the world in after life, having learnt to be more observant of things around them. He mentioned that it was contemplated to hold a Nature Study Exhibition in the Gardens of the Royal Botanic Society, to which he invited all Selbornians, and trusted that they would do all in their power, both by their presence and help, to make it a great success.

The company then proceeded on their homeward journey, many nests and wild flowers being pointed out by their ever-willing guide, to whom a debt of gratitude is due for the energy which he displayed during the afternoon, and which tended so much to make the ramble a great success. Photographs of the company were taken during the afternoon by Mr. Baker.

May 2.—Our Field Club assembled at Waldingham Station in spite of the heavy forenoon rains, and were well rewarded by a bright afternoon. A turning to the left soon led to a field where peppermint was being grown. Here were seen the early green leaves of fumitory and some of the small blue speedwell, *Veronica hederæfolia*, with its ivy-shaped leaves. The path led through two fields until it reached the ridge of a hill some 500 feet high, along which the ramblers sauntered. The pale buds of the white beam showed whitely against the brown trunks and branches; *Viburnum Lantana* was plentiful and already in flower; the spruce firs were putting forth new leaves, and in some cases were tipped with tiny crimson conelets; but the holly which bordered the wood, although full of life, appeared to have had its leaves attacked and stained by some insect, whose chrysalis was discovered after examination under the upper surface of the leaf. Some eager searchers discovered the blue milkwort, *Polygala calcarea*. *Arum maculatum*, both with black and white spotted leaves, was plentiful; a few examples of *Ranunculus bulbosus* were noticed in flower, while as we emerged into the road we noticed one bank quite gay with *Ranunculus auricomus*. The party then emerged into and crossed the wide, grassy-bordered road leading to Warlingham and entered a common golden with gorse. Here the nightingale was heard and seen, although the cold April has made him somewhat a lingerer this season. Tea was served at the Bull Inn on Chelsham Common, after which the party returned to town from Warlingham Station.

May 9.—In somewhat unpromising weather a dozen Selbornians left Waterloo on this Saturday afternoon, eager to renew acquaintance with scenery of which, since their visit nearly a year ago, all of them must have had a pleasant reminiscence. By the flower-scented gardens of Clandon enclosing, some of them, old-world timber houses, the visitors made their way to the church, in the porch of which they sought shelter from the downpour. The wait afforded to some the opportunity of inspecting the interior of the edifice, while others noted the delicious freshness of the beech, contrasted so strongly against the yew, or the primroses that pied the ground between the mounds. By the time Newlands Corner was reached the rain had ceased and atmospheric conditions generally had so improved that the famous view to be enjoyed therefrom was disclosed to the greatest advantage. In a copse near there grew abundance of bluebells: yellow gorse in the foreground, blue haze in the distance: it was, in truth, a banquet of colour. Nor was the ear less cared for. There were nightingales in all directions in fullest song; larks, too, singing as only wild larks can sing; merry chaffinches uttering their roundelay; whitethroats of feeble tones, and thrushes with infinite variations. A linnet's nest was cautiously observed, and the hen bird, sitting so closely, hardly moved under the tender scrutiny. The return was made through

Clandon Park, where there was a brief pause in front of the mansion to watch the diving water-fowl.

FORTHCOMING RAMBLES.

June 6.—Hayes Common and Keston. Train leaves Cannon Street 2.22, arriving at Hayes at 3.17 (change at Elmers End). Take return tickets to Hayes, but before doing so see the guide (Selborne badge) who will be at the bookstall at Cannon Street at 2 p.m., and if a sufficient number go tickets will be issued at less than the usual fare. The return train leaves Hayes at 8.23.

June 13.—Selborne (see special notice).

June 20.—Ramble along the Downs over Shere and Albury. Take cheap return tickets to Horsley, 2s. Train leaves Waterloo at 2.22, arriving at Horsley at 3.20. Walk viâ West Horsley to Francis Corner (4 miles), and then along the downs 2 miles to Newlands Corner. Tea at the Refreshment House, Newlands Corner at 6.30. After tea walk to Clandon Station, single fare to Horsley, 4d. Guide, Mr. A. B. Wilkinson.

June 27.—Stanmore. Train leaves Euston for Pinner at 2.20, calling at Willesden Junction at 2.32, and Broad Street at 2.20, calling at Willesden Junction at 2.44. Take return tickets to Pinner (L. & N.W.R.). Walk from Pinner via Harrow Weald and Stanmore Common to Elstree Reservoir for tea at 5.45. Return to Stanmore Station by field-paths. Guide, Mr. Geo. Avenell.

July 4.—Epsom and Ashstead Woods. Train leaves Victoria 2.14; Waterloo (S.W.R.) 2.40; London Bridge (L.B. & S.C.R.) 2.0. Meet at 3.30 at Epsom Station (S.W.R.) Walk from Epsom Station over Common to Ashtead Oaks. Tea at Ashstead and return from that station. Guide, Miss E. Giberne. Ask for cheap tickets to Epsom.

VISIT TO SELBORNE. June 13.—The list for this ramble is now closed. Mrs. Percy Myles will communicate all particulars *direct* to those members who have signified to her their intention of attending on or before June 5.

ANSWERS TO CORRESPONDENTS.

Percy Clark.—The Peasant Arts Society, 8, Queen's Road, Bayswater, will have a fresh supply of nesting-boxes in time for the next season.

LETTERS RECEIVED.

Letters have been received from W. C. Birch, Miss A. R. Francis, Mrs. Needham, Mrs. C. A. Owen, Mrs. Price, Mrs. E. O. Proud, Dr. Graham Renshaw, and Mrs. Maitland Wood. These will be answered as soon as possible

NOTICES TO CORRESPONDENTS.

1. All communications for NATURE NOTES must be authenticated with name and address, not necessarily for publication.

2. The return of an unaccepted contribution can only be guaranteed when it is accompanied by a stamped and addressed envelope. We cannot undertake to name specimens privately, to return them, or to reply to questions by letter.

3. All communications for any number must be in the Editor's hands by the 10th of the preceding month.

4. Communications for NATURE NOTES, books for review, specimens for naming, &c., should be addressed to the Editor, PROFESSOR BOULGER, F.L.S., F.G.S., 11, Onslow Road, Richmond, Surrey.

5. For the supply of the Magazine to others than members address the publishers, Messrs. JOHN BALE, SONS AND DANIELSSON, Ltd., 83-89, Great Titchfield Street, London, W.

6. Letters connected with the business of the Society, subscriptions, &c., should be addressed to the Secretary, Mr. R. MARSHMAN WATTSON, 20, Hanover Square, W.

Nature Notes:

The Selborne Society's Magazine.

No. 163. JULY, 1903. Vol. XIV.

SELBORNIANA.

The Conversazione.— Owing to the pressure under which our report of the Annual Meeting was produced, several regrettable omissions and errors occur in the list of objects exhibited. The photographs attributed to Mr. Martin, on p. 113, were shown by Mr. William Farren. Mrs. Brightwen sent a series of accurately painted drawings of various birds, which elicited frequent expressions of admiration. Miss Ellen G. Hill, of Frognal, exhibited a picture of "The Wakes," as it was in the time of Professor Bell, painted by herself. Mr. G. H. Wattson showed various living specimens of tortoises, lizards and snakes, including *Testudo græca*, *Emys orbicularis*, *Chrysemys picta*, *C. concinna*, *Lacerta ocellata*, *Tropidonotus natrix* male and female, *T. fasciatus* and *T. tesselatus*. In the small room off the corridor there was an exhibition of microscopes, kindly lent by Messrs. J. E. Cooper, E. C. Goulton, Alfred E. Hilton, F. Rousselet, Charles West, C. H. E. West and E. Hinton.

By the kindness of Messrs. Moore and Moore, of Bishopsgate Street Within, an excellent programme of music was performed on the first floor. In addition to supplying the grand piano, and arranging the items, which were performed by expert but anonymous musicians, Messrs. Moore and Moore supplied a Simplex Pneumatic Piano Player, with the assistance of which the accompaniments were rendered.

A Protest.—We have received the following letter from Mr. E. A. Martin, F.G.S.:—

Many of your readers who were at the Conversazione on May 5 no doubt noticed an exhibit of birds imported from India, which were said to be injurious to agriculture, the object of the exhibitor being, it was reported, to obtain the partial withdrawal of the order of the Indian Government which prohibited the export of birdskins and plumage for millinery purposes. As I acted as Hon. Sec.

to the Conversazione Committee, and was to some extent responsible for the exhibits, I beg that you will publish in NATURE NOTES this my disavowal of any sympathy with the importation of bird skins and bird plumage into this country, and that you will allow me to state that the presence of the exhibit came as a great surprise to myself as to other people.

A PLEA FOR LOCAL SECRETARIES FOR THE SELBORNE SOCIETY.—We have received the following suggestion from Mrs. E. O. Proud:—

If a Society means to extend the field of its operations and be a power in the country, it cannot do better than secure the help of pioneers in the shape of assistant-secretaries.

In many places it would be impossible to form a Branch, viz., in busy business towns where there is neither inclination nor leisure to embark in such a scheme; also in many country places where the population is too widely scattered to admit of bringing a number of people together. But in places like these an energetic secretary may do much useful work:—

(1) By studying the local papers many a delinquent may be brought to book.

(2) Seeing and hearing what is going wrong in your district and reporting same.

(3) Spreading a knowledge of the Society's work by distributing leaflets and calling people's attention to the charming state of things that would result if *everyone* kept the Selborne Society's rules.

These secretaries ought to form a net-work over the whole country, and I feel sure many would write to them giving information who would hesitate before addressing to head-quarters.

RICHMOND VIEW.—An important step in the preservation of this beauty spot was taken on May 30, when Lord Monkswell, as Chairman of the London County Council, opened the Marble Hill estate at Twickenham. The Society was represented on the occasion by its Secretary, but the proceedings were marred by most inclement weather. The Council issued a sumptuous illustrated *souvenir* of the proceedings written by their indefatigable clerk, Mr. G. L. Gomme, and containing among other illustrations a most interesting map of all the lands which have been dealt with in connection with the preservation of the view.

HENLEY STREET, STRATFORD-ON-AVON.—The Council appointed a delegate, Mr. J. S. Phillips, who visited Stratford on June 5, in company with representatives of the British Archæological Society, examined the site of the proposed Free Library, and interviewed the Chairman of the Library Committee and Miss Corelli. Mr. Phillips reports the pulling down of the cottage next to the china-shop as producing a gap in the line of old red-brick fronts, deprecates any interference with the front of the china-shop, the interior of which is too old to permit of structural alterations, and recommends that this cottage should be merely repaired and thrown open to the public.

BIRD PROTECTION IN EGYPT.—The notice of the Society was called to the following, in the *Globe*, of May 2, 1903, and the Council communicated with the Foreign Office on this subject:—

Bird Protection.

Attention is once more called by the *Animals' Friend* to the destruction of insectivorous migrants in Egypt, on their way to and from Europe. In the early days of April the Egyptian Government actually let out certain suitable tracts of land to professional bird-catchers, who erect arrangements of leaves and branches, which they smear with a sticky composition, scattering food round about to attract the birds. It is stated that in one place, on one day alone, 20,000 small birds were captured by these means.

FOREIGN OFFICE, *June* 23, 1903.

SIR,—With reference to your letter of the 21st ultimo, I am directed by the Marquess of Lansdowne to transmit to you herewith, to be laid before the Council of the Selborne Society, copy of a despatch from His Majesty's Agent and Consul General at Cairo relative to the alleged destruction of insectivorous birds in Egypt.

It will be seen from Lord Cromer's despatch, that the statement in the *Globe* newspaper, to which attention was drawn in your letter, is devoid of foundation, and that the Egyptian Government are considering the question of protective legislation on the subject.

I am, Sir, your most obedient humble servant,

R. Marshman Wattson, Esq., T. H. SANDERSON.
Secretary to the Selborne Society,
Hanover Square, W.

[Copy. No. 76.] CAIRO, *June* 7, 1903.

MY LORD,—I have the honour to reply to Your Lordship's despatch No. 95 of the 27th ultimo.

The statement which appeared in the *Globe*, and to which allusion is made by the Selborne Society, is wholly devoid of foundation.

I think I may say that every responsible authority here is in entire sympathy with the objects of the Selborne Society. The question of protecting insectivorous birds has been frequently under consideration in Egypt. The difficulties in dealing with the subject are unfortunately considerable. They arise, broadly speaking, from the rights conferred on Europeans by the Capitulations. No very effective legislation in this, or in cognate matters, is possible without the unanimous consent of all the Powers of Europe, and experience has shown that unanimity, when any legislative measure is proposed, can rarely be obtained. Within certain very narrow limits, however, the Egyptian Government can legislate for all the inhabitants of Egypt, with the assent of the General Assembly of the Mixed Courts. I have the honour to enclose a draft Khedivial Decree, which is now under the consideration of the General Assembly, and which will, I trust, shortly become law. I do not say that this measure goes as far as could be wished, but it will, I hope, do some good. After consultation with the various authorities concerned, it was thought that, for the present at all events, any more ambitious legislation would not, in all probability, be operative in practice.

The results which will be obtained, should the new law be passed, will be watched, and, if necessary, the matter can be reconsidered at some subsequent period.

I have, &c.,

The Marquess of Lansdowne, K.G., &c., &c., &c. (*Signed*) CROMER.

[*Copie.*] PROJET D'ARRETE,

Le Ministre de l'Intérieur,

Considérant qu'il est de l'intérêt général de protéger les oiseaux utiles à l'agriculture ;

Considérant qu'il y a lieu aussi de protéger les cailles contre les mauvais

traitements résultant de leur prise dans les filets ou les pièges sur le bord de la mer ;

Vu la délibération de la Cour d'Appel Mixte en date du

ARRETE :

Article 1er.

La chasse au moyen de gluaux est interdite sur tout le territoire Egyptien.

Sont aussi interdite le transport par chemin de fer ou tout autre moyen, le colportage, la mise en vente, la vente et l'achat des oiseaux connus pour la plupart en Egypte sous le nom général de bec-figues.

Article 2.

Est également interdite la chasse des cailles au moyen de filets ou pièges sur les terrains du Gouvernement situés à une distance moindre de 1,000 mètres des rivages de la mer.

Article 3.

Les contrevenants au présent arrêté seront punis d'une amende dont le maximum est fixé à 100 P.E.

En cas de contravention, les filets, gluaux et autres articles prohibés par le présent arrêté ainsi que les produits de la chasse seront confisqués.

LISTE DES OISEAUX DONT LA CHASSE EST DEFENDUE AU MOYEN DE GLUAUX.

Passereaux Ordinaires.

1. Fauvette Grise (*Sylvia cinerea*).
2. Fauvette des Jardins (*Sylvia hortensis*).
3. Fauvette Colombande (*Sylvia orpheus*).
4. Fauvette Babillarde (*Sylvia curruca*).
5. Fauvette à Lunette (*Sylvia conspicillata*).
6. Fauvette à Tête noire (*Sylvia atricapilla*).
7. Fauvette Passerinette (*Sylvia subalpina*).
8. Fauvette Melanocephale (*Sylvia melanocephala*).
9. Fauvette des Marais (*Acrocephalus palustris*).
10. Fauvette des Roseaux (*Acrocephalus streperus*).
11. Rousserolle (*Acrocephalus turdoides*).
12. Roussette (*Acrocephalus phragmitis*).
13. Phragmite Aquatique (*Acrocephalus aquatica*).

13bis. Fauvette Cisticole (*Cisticola cisticola*).

14. La Fauvette Grise tâchetée (*Locustella locustella*).
15. La Cetti Luscinoide (*Locustella luscinoides*).
16. La Cette à Moustache (*Lusciniola melanopogon*).
17. Cetti Bouscarle (*Celtia cetti*).
18. Le Rossignol (*Erithacus luscinia*).
19. Le Rouge Gorge (*Erithacus rubecula*).
20. Le Gorge Bleue (*Erithacus cœruleculus*).
21. Le Rossignol des Murailles (*Ruticilla phœnicura*).
22. Rubêtte rouge Queue (*Ruticilla lithys*).
23. Pouillot Chantre (*Phylloscopus trochilus*).
24. Pouillot Bonelli (*Phylloscopus bonelli*).
25. Pouillot Veloce (*Phylloscopus rufus*).
26. Pouillot Ictérina (*Hypolais icterina*).
27. Traquet Stapazin (*Saxicola stapazina*).
28. Traquet Mottheux (*Saxicola œnanthe*).
29. Traquet Oreillard (*Saxicola auvita*).
30. Le Tarier (*Praticola rubetra*).
31. Le Traquet Pâtre (*Praticola rubicola*).
32. Pie Grièche Grise (*Lanius excubitor*).
33. Pie Grièche d'Italie (*Lanius minor*).
34. Pie Grièche Rousse (*Lanius auriculatus*).
35. Pie Grièche Ecoreheur (*Lanius collurio*).
36. Gobe-Mouche Gris (*Muscicapa griseola*).
37. Engoulevent (*Caprimulgus europeus*).
38. Huppe Vulgaire (*Upupa epops*).

Grimpeurs.

39. Torcol Vulgaire (*Yunx torquilla*).
40. Coucou Chanteur (*Cuculus canorus*).

Syndactiles.

41. Rollier Ordinaire (*Coracias garrula*).

Children's Country Holidays.—With reference to the Nature-study work of the Children's Country Holidays Fund, which we mentioned last week, a good suggestion has been made as to a way in which the Selborne Society could help. It is that Selbornians living in the districts to which the children are sent might make inquiries as to where the latter are located, and afterwards spend some small amount of time in initiating them into the ways of observing the common plants and animals around them.

Hampstead Heath Extension.—Faithful to the object for which they exist, the Hampstead Heath Extension Council are issuing an appeal for aid in securing Wylde's Farm, and the beautiful meadows on the north-west boundary of the Heath adjacent to the authorised station of the Charing Cross, Euston and Hampstead Railway, from the hands of the builders. The area is eighty acres in extent, and is offered by the Eton College Trustees for £48,000, towards which sum there is reason to hope that public bodies will contribute when the public have shown a real interest in the acquisition. These singularly beautiful fields form an integral part of the foreground of the far-famed view from the Spaniards Road and the north-west heath, and, if preserved, might in part be utilised for playing fields. Subscriptions should be sent to the Hon. Secretary, Mrs. S. A. Barnett, St. Jude's Cottage, Spaniards Road, Hampstead Heath.

John Evelyn Club.—With this very appropriate title for a Surrey society, and under the presidency of Mr. T. G. Jackson, R.A., with Messrs. Clarence Moran and Richardson Evans as honorary secretaries, a Club has been established at Wimbledon to unite all residents who value grace, dignity and interest in the aspect of their surroundings (1) in protecting from unnecessary impairment the picturesque amenities of the neighbourhood; (2) in promoting the study of its historical associations, zoology and botany; (3) in preserving the fauna and flora, as well as objects of historical and archæological interest. The Club will act locally so as to advance the objects of such societies as the Commons and Footpaths Preservation Society, the Kyrle Society, the Selborne Society, the Birds' Protection Society, the National Trust, &c. We wish it every success.

Larks at the London Hospital Ball.—A lady writes to us as follows on this constantly recurring piece of wholesale barbarism:—

May I call your attention to the revolting statement contained in the enclosed newspaper cutting from to-day's *Standard*, with reference to the provision of 3,000 larks for the consumption of the general public at the London Hospital Ball. Keeping in mind the charitable object of this event, viz., the maintenance of our hospitals, institutions which beyond anything else testify to our civilisation, it strikes one as something more than a painful contrast that so much of the "brute" still lingers in our common humanity as is implied by this startling announcement. It seems to me a blot on the whole entertainment. Larks must presumably be very plentiful, but even putting aside the thought of a possible extermination, one marvels how anyone who has once revelled in the joyous strains of these little pastmasters of "unpremeditated art" can bear the idea of any diminution in their numbers. It is impossible to conceive of our English fields without their hopeful little songsters, and I should feel unworthy to call myself an Englishwoman did I not lodge a protest against such heartless slaughter.

FURTHER MEMORIAL TO RICHARD JEFFERIES.— Our issue of last December furnished a brief account of the placing of a tablet on the house in Victoria Street, Swindon, at one time occupied by the Wiltshire writer. That was done under the auspices of the North Wilts Field and Camera Club, and we are now able to record the completion of that excellent body's scheme, in the unveiling, on the 6th ult., of another tablet fixed on the garden wall, abutting on the road, which runs in front of the farm house at Coate, where Jefferies was born, and which has been described in "Wild Life," "Meadow Thoughts," "Amaryllis," and other of his writings. The inscription on the tablet is as follows:—"Birthplace of Richard Jefferies. Born Nov. 6, 1848." Mr. H. Bottomley Knowles, M.A., presided over the meeting, which listened with rapt attention to the appreciative address of the Club's President, Mr. N. Story Maskelyne, the famous mineralogist, to whom had been confided the duty of unveiling. The Selborne Society was represented on the occasion by Mr. Geo. Avenell, who is a native of the parish in which Jefferies was born. It may be a convenience to intending visitors to know that Mr. J. Gosling, the present owner of the house, will allow inspection of it and the garden to any Selbornians applying to him.

WAITING FOR THE TIGER'S APPROACH.

TO wait for a tiger's approach in the manner which I am about to describe is most interesting, because so many birds and animals present themselves to view, whose every look, whose every act, are so perfectly natural that it quite fascinates, whilst it charms the solitary human observer, secluded and unobserved, hidden up a tree amongst thick foliage, with only a small window framed by leaves to look through. The patience of man, after remaining in a comfortless position for hours, fearful of moving or even of breathing loud, and often attacked by winged insects, ants,

&c., to say nothing of the inclination one has to sneeze at times or to blow one's "nose," all of which must be endured without giving way to impatience or to personal natural instincts, for fear of making a noise; these self-denials are eventually rewarded by something never seen elsewhere.

At about sunset various denizens of the forest, hitherto unseen, emerge from their shelters, very warily indeed, sometimes listening attentively, sometimes advancing, at other times retreating, and always with watchful gaze around, just as if they were all fearful of something, and doubtless they are, for they live on one another. The jackal, the civet cat, the hyena, the fox, the weasel, the mongoose, may all come out, and amongst the feathered tribe the peacock and the jungle fowl. Perhaps a sambhur, an antelope or a spotted deer, will favour you with a sight of them. And what a different sight to that of the same creatures imprisoned in cages and small enclosures in a zoological garden. There, poor things, they are seen at their worst, but here they appear as Nature made them. The on-looker in the tree hardly dares to breathe for fear of giving the alarm. In the meanwhile the tiger stealthily and slowly approaches. One of the first signals given is the chattering of the monkeys in the trees. The crows perched on boughs crane their necks in the direction of the coming tiger. Small birds fly through the bushes in front of him with a rushing sound, and the sportsman gets ready. Step by step, with may be an interval of half a minute or so between each step, and nearer and nearer comes the tiger, until his deep breathing can be heard. At length he emerges to have his evening meal on the dead buffalo which h has slain the night before, and then he meets his death from the bullet from the sportsman's rifle, whose patience is rewarded; but this good luck does not by any means always happen.

Montrose, A. YALDWYN,
December 1, 1902. *Lt.-Colonel, D.S.O.*

REVIEWS AND EXCHANGES.

Hampshire Days. By W. H. Hudson. Longmans. Price 10s. 6d. net.

Our previous experience of Mr. Hudson would by itself make us anticipate with pleasure the perusal of his journal in any district he may choose to visit; but to the naturalist, to the Selbornian naturalist, what could be more interesting than to read the observations and thoughts of the naturalist of La Plata upon the county of Gilbert White? Though plant and insect do not escape his eyes and mind, Mr. Hudson is pre-eminently an ornithologist, so that it is not unnatural that half his volume should be concerned with the New Forest, and that his account of Selborne revisited should deal mainly with the birds of the village. The whole work is, however, delightfully discursive and full of the most pregnant suggestions, the outcome of the keenest personal observation. It contains also nearly fifty excellent illustrations, the work of various artists, of which, by the courtesy of the publishers, we are enabled to give an example. We wish we

could answer Mr. Hudson's query as to the date of the introduction of the North American wild musk—*Mimulus Langsdorffii*, as its correct name is—into our streams. It is not mentioned in Smith's "English Flora" (1829), but may only

AN ANGRY YAFFLE.

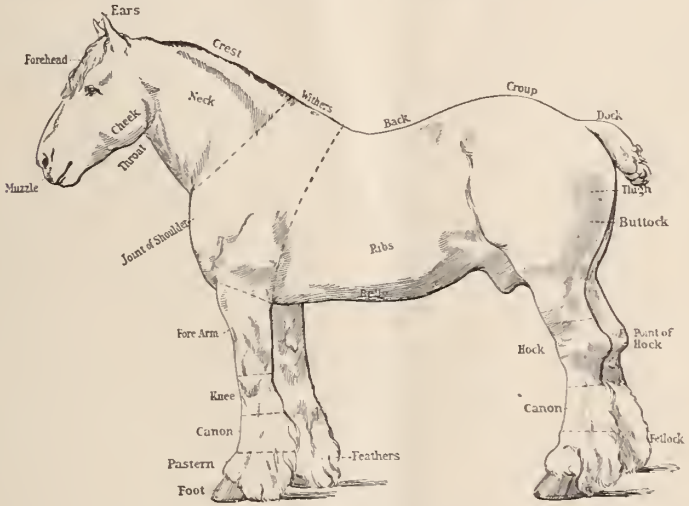
(From Mr. Hudson's "Hampshire Days," by permission of Messrs. Longmans.)

have been omitted as not indigenous. In the Salisbury Avon it seems to have been first noticed in 1830; but certainly Mr. Townsend hardly did justice to its prevalence in Hampshire in his "Flora" of 1883.

Lessons on Country Life: a Guide to the Study of the Animals of the Farm, their Habits, Uses, and Treatment, together with Notes on the Wild Animals, Wild Birds, and Injurious Insects common to our Woods and Fields. By H. B. M. Buchanan and R. R. C. Gregory. Macmillan & Co. Price 3s. 6d.

Beyond the meticulous objections that its main title is too comprehensive, and that birds and insects are animals, and should not, therefore, be contradis-

tinguished therefrom, we have nothing but praise for this little book. It is not a "reader," but a teacher's note-book, conveniently arranged under eighty lessons, comprising, for instance, four on the horse, four on cattle, eleven on milk, dairying, and cheesemaking, seven on poultry, seventeen on British birds, and thirteen on insects. The book is very fully illustrated throughout, some of the drawings being such as would appear on a larger scale as wall-charts in rural



POINTS OF A HORSE.

(From "Lessons on Country Life," by kind permission of Messrs. Macmillan & Co.)

schools, while others, which are to our mind the more useful, and of which by the courtesy of the publishers we give an example, are outline diagrams suitable for reproduction on the blackboard. The notes are a remarkable storehouse of facts, with no attempt at the elegances of "fine writing." In a subsequent enlarged edition, we would venture to suggest that further life-histories of farm and garden insects might be added.

Walton and some earlier Writers on Fish and Fishing. By R. B. Marston. The Book-Lover's Library. Popular Edition. Elliot Stock. Price 1s. 6d.

"It might sweeten a man's temper at any time," says Charles Lamb, "to read 'The Compleat Angler.'" There is so much in common between the two books that it is a mere commonplace of criticism to class it with White's "Selborne." Walton is even more gossipy than White, and those who love his gossip—and who that has read it does not?—will relish Mr. Marston's gossip about him and his predecessors in the gentle art. By issuing this companionable book, as Lowell termed it, at a lower price, though in the best of type and handiest of forms, Mr. Elliot Stock has earned the gratitude of a wider circle of readers than the work has yet had.

A Gloucestershire Wild Garden, with some extraneous matter. By the Curator. With photographic illustrations. Elliot Stock.

Some years ago Canon Ellacombe published a work with a title so similar to that of this book as to make confusion only too possible. This title is moreover somewhat misleading in another respect. The term "wild garden" has come to be generally accepted as descriptive of a garden of hardy plants left very much to themselves, whereas the fascinatingly beautiful pleasaunce described

THE ABYSSINIAN BANANA (*Musa Ensete*).
(From "A Gloucestershire Wild Garden," by permission of Mr. Elliot Stock.)

in the present volume, which lies, we are told, between the Severn and the Forest of Dean, is very largely a sub-tropical garden, in which, as may be seen in the illustration Mr. Stock kindly allows us to reproduce, luxuriate palms, bananas and bamboos. With much pleasant description of his garden's charms, the Curator mingles useful information as to the treatment of such a garden, though we hardly expected to find an appendix on the loss of control by the will centre over the emotional system. We wish the author had asked his friends the Padre and the Professor to correct his proofs, as too many of the scientific names have slipped through mis-spelt. The book contains twenty-six beautiful photographic illustrations.

The Cloud World, its Features and Significance. By Samuel Barber. Elliot Stock.

Personal observations extending over forty years must always be received with gratitude and respect; but this sense of indebtedness to the author is perhaps greater when the subject of his study has been one of such beauty and such general interest as clouds. Though with no pretension to writing a form

"ANIMAL" CLOUDS (*Fracto-Cumulus*).
(From "The Cloud World," by permission of Mr. Elliot Stock.)

treatise on his subject, Mr. Barber, with the help of over thirty beautiful illustrations, mostly from photographs, one of which we are enabled to reproduce here, has given us a most attractive volume. It contains a very full glossary of terms used in describing clouds.

The Irish Naturalist for June contains, among other interesting matter, articles on the spring rivalry of birds, and on the leaf-spots of *Arum maculatum*.

The University of Colorado Studies, No. 3 (Price 50 cents), contains a preliminary list of the birds of Boulder county and a brief anatomical paper on the cotyledons of certain *Papilionaceæ*.

The Wellcome Physiological Research Laboratory.

This sumptuously bound and illustrated pamphlet describes the excellent physiological work, especially in connection with anti-toxin serums, carried on at Brockwell Hall.

Pictorial Postcards: Nature Series.

Mr. Chas. Mosley, of the Museum Press, Lockwood, Huddersfield, sends us a specimen, drawn by Mr. Patteson, of a series which he is issuing at 13 for 6d., 50 for 1s. 9d. and 100 for 3s. 3d.

RECEIVED:—*The Butterflies and Moths of Europe*, by W. F. Kirby, Parts 29 and 30; *The Victorian Naturalist* and *The American Botanist* for May; *The Parents' Review*, *The Animals' Friend*, *The Agricultural Economist* and *The Commonwealth*, for June.

NATURAL HISTORY NOTES.

1. **Misquotation.**—With reference to misquotation on p. 125 of this month—"delight to bark and bite for 'tis their nature to"—an Oxford librarian observed in the *Times* last year that Dr. Watts, though not a great poet, was by no means an ungrammatical writer. Here, then, is the true version:

"Let dogs delight to bark and bite,
For God has made them so;
Let bears and lions growl and fight,
For 'tis their nature too." E. E. KELLY.

2. **Is Nature Cruel?**—Mr. Edmund Thos. Daubeny gives a very interesting summary of facts in affirmation of this, and invites the readers of NATURE NOTES to discuss the subject in your journal. Mr. Daubeny contends that animals are conscious agents in the cruelty of Nature.

May I suggest that the term cruelty is inapplicable to Nature as a whole and to animals individually? It seems to me that man only, as the denizen of a moral world, can be called cruel. It may be admitted that certain domesticated animals, through association with us, have seemed to imbibe a degree of moral sense, but it is difficult to see how animals in a state of nature, as in the instances adduced, can be called conscious agents of cruelty.

Man, alas, continues for sport and food to imitate many of the ways of animals, without the justification which may reasonably be extended to the carnivora. THOMAS POLE.

3.—I have read the Rev. E. T. Daubeny's article on the cruelty of Nature in this month's NATURE NOTES with interest, and although I cannot say that Nature is not cruel, yet I do not think it is nearly so bad as the Rev. E. T. Daubeny paints it. Passing over the remarks relating to birds, which I am afraid I cannot question as I have not paid much attention to that part of the question, we come to those relating to insects, spiders and worms. I believe that the invertebrata do not feel pain in the same degree as man does, even if they do at all, for the following reasons: insects, more especially beetles (*Coleoptera*), have been known, after having been subjected to the fumes of a cyanide killing bottle, and after having been pinned and set, to have revived and made a meal off some of their dead companions. Mutilated insects have also been kept alive for several hours or even days, they all the time feeding well. If the larvæ of insects felt pain in the same degree as man does, is it likely that they would be able to live through all that which they have to undergo when stung by an ichneumon? If anything of the kind happened to man, would he not die before many days of suffering had passed? Besides, many animals have one of the known senses missing, some are blind, others are deaf, and we cannot say that all animals have the sense of smell and taste, so that it would not be very surprising if the invertebrata did not have the power of feeling developed.

We next read that "most of the cat tribe are consciously cruel," and that "they delight in playing with their prey," in reply to which I will quote what Livingstone, the great missionary, has told us about his experiences and feelings when in the clutches of a lion, which are as follows:—

"He caught my shoulder as he sprang, and we both came to the ground below together. Growling horribly close to my ear he shook me as a terrier dog does a rat. The shock produced a stupor similar to that which seems to be felt by a mouse after the first shake of a cat. It caused a sort of dreaminess, in which there was no sense of pain nor feeling of terror, though quite conscious of all that was happening. It was like what patients partially under the influence of chloroform describe, who see all the operation, but feel not the knife. This singular condition was not the result of any mental process. The shake annihilated fear and allowed no sense of horror in looking round at the beast. This peculiar state is probably produced in all animals killed by the carnivora, and if so, is a merciful provision by our benevolent Creator for lessening the pain of death." Whether the cat and other animals delight in taking life, I do not pretend to know, but if so they cannot be blamed by man, who is certainly as bad, or worse, than them in this respect.

The above remarks will suffice, I think, to show that Nature is not so cruel as is made out in the article by the Rev. E. T. Daubeny, but I am afraid they will not warrant my saying that animals die "quietly and peacefully nine-tenths of them," as Mr. W. I. Long states in his "School of the Woods," the last two chapters of which throw a good deal of light on this subject.

Carlton House,
Herne Hill, S.E.

RALEIGH S. SMALLMAN.

4. Competition for Nesting Boxes.—The numbers of nesting boxes in my garden are considerable, and though I add to them each year the applicants for tenancy in this congested avian district are many and persistent. One of my boxes is divided into two tenements, with an entrance at each side. Two pairs of sparrows have seized on this and refuse to take notice to quit. For six weeks I removed the materials, as much as a handful at a time collected in one compartment, only to find that next morning it was nearly all replaced. The other caused a battle for a fortnight with a pair of great tits, who at last took to another box a short way off leaving the sparrows in possession. Last year there was a contest between wrynecks and sparrows for a favourite box, and unfortunately the sparrows won. This year, however, I am glad to find a pair of wrynecks have seized upon a box from which they have ejected the sparrows that had been in possession for a month. In this single-roomed box two broods of great tits were raised last year.

In front of my bedroom window there are three boxes, the centre one of which was furiously fought for by at least a dozen starlings morning after morning until at last the most valiant pair prevailed. The other two, after being frequently inspected in a half-hearted way, were abandoned to the sparrows. I have known starlings, sparrows, wrynecks, and two kinds of tits take fancy to the same box, sometimes one, sometimes the other, prevailing in the end, and causing no little amusement while their rivalries went on.

No bird is more persistent than the sparrow. If a starling walks into his holding and turns the contents out the sparrow sits close by, or chases him as he flies away, and enters the box again the moment he is gone and repairs the damage, though in such a case the larger bird, if in earnest, almost always wins the day.

Sparrows are a perfect pest in this grain district, doing great damage to the crops, and hindering the breeding of many useful birds, especially house martins, by seizing on their nests. I generally remove the young sparrows from the nest just before they are full-fledged. By this means the greatest amount of good is got out of these "avian rats," for the food they give their young principally consists of caterpillars and insects of different kinds, and after going through the trouble of feeding a brood they are not so likely to undertake the work again as if their eggs merely were taken.

One has only to see the numbers of sparrows about here to come to the conclusion that they ought to be kept in check; and if anybody pitches into me for

thus showing my objection to being overdone by these feathered parasites of man, I will try to bear it.

June, 1903. EDMUND THOS. DAUBENY.

5. Garden Warbler.—Birds often resort to different devices for decoying intruders away from their young, and until the other day I had never experienced any of these devices in connection with garden warblers. One of these birds evidently thought my presence in a particular spot on my lawn very undesirable, for she came almost within arm's distance uttering plaintive notes of distress, and throwing herself at my feet as if wounded, with outspread wings and expanded tail. As I slowly followed she repeated the performance until I had gone far enough to suit her fancy, when she quietly decamped.

Market Weston, Thetford, EDMUND THOS. DAUBENY.
June, 1903.

6. Notes on Birds at Thetford.—On May 9 a splendid sparrow-hawk was seen hovering over the town; these birds have become very rare, as the keepers on most of the estates near Thetford shoot them whenever they come within reach. Owls, jays, and magpies are not so plentiful as they were a few years back; the keepers shoot these birds whenever they come within reach of their guns. While going across the park of one of the large estates near Thetford I met a keeper who was carrying a jay in his hand; knowing the man, I asked him how he caught the jay: he said in a steel trap by the leg. The poor bird had died in the trap before he had visited it. What terrible suffering the poor thing must have gone through till death relieved it from all misery!

I am pleased to inform readers of NATURE NOTES that we have two or three pairs of barn owls living in Thetford, as I saw a pair go over to the Abbey ruins, and also another pair which visited an old barn in another part of the town.

Kingfishers are very rare; up to the present I have only come across three or four. A few years back I should have seen twenty or thirty by this time.

While down by the river I had the pleasure of watching a fine heron fishing in the shallow water; they seem to be decreasing in numbers. Wild ducks and water hens were busy with their broods of young, which disappeared in among the rushes at the least sound.

Hawfinches: a gardener at one of the large halls near Thetford informed me that during the summer they shoot between thirty and forty of these beautiful birds because they eat a few peas. What a disgraceful shame that the owners of the gardens should allow the birds to be killed for the sake of a few peas!

Nightingales are in this district in great numbers; I should think there are quite double the number there were last summer. I counted over thirty in a plantation of about 300 yards long, and stood listening and watching them for half an hour, as most of them were whistling. Last summer, while going through West Harling, I saw a keeper shoot one as it sat on a branch of a tree whistling. I suppose he had the same idea as a keeper which I heard of at Downham—he shot nightingales because they kept the young pheasants awake at night. What will not some of them do for pheasants! I hope there are no more keepers in any part of England with that silly idea.

Swallows, martins, and swifts are not nearly so numerous as they have been in past summers; I should think the cold weather we had when they were arriving affected their numbers a good bit. In Spain a large number of these birds are caught by putting up very large nets when they are passing over to other countries.

Cuckoos, wrynecks, and nightjars seem to keep to the usual standard for numbers. Nightjars have been flitting about the streets in the evenings, which is rather unusual. Green woodpeckers are plentiful; they have increased of late years. Great and lesser spotted woodpeckers have decreased; I have walked and cycled miles round the district, and have only come across a very few of these beautiful birds.

On May 10, while round by the river, I disturbed a pair of black-headed buntings, the first I had seen this year. On May 16 I watched a pair of golden-crested wrens on the trees close to Euston Bridge. These birds are becoming very rare in this district. Goldfinches are increasing, but I should like to see double the quantity of these pretty little birds.

Bullfinches are very few in numbers; there seem to be less each summer. While having a friendly chat with a gardener at one of the large gardens in the town the topic of birds was brought up. I asked him if there were any bullfinches visited his garden. "Oh yes, we have some come when the buds are on the bushes and trees, but we shoot them whenever there is a chance." I advised him to give over shooting them, as they were becoming very scarce.

The hedges by the road sides and green lanes are quite alive with the young of blackbirds, thrushes, robins, linnets, whitethroats, tits, &c., while on the heaths the wheatears, stone curlews, and lapwings can be watched busy bringing up their youngsters. Lapwings are decreasing on our heaths; the collecting of their eggs by the keepers, who get a good price for them in London, would in some degree account for the smallness of the numbers. Stone curlews have increased in good numbers; in the evening they are continually passing over the town; their call-note can be heard a great distance off.

I have picked up several dropped eggs of starlings, thrushes, and sparrows this last month. Could any reader of NATURE NOTES explain the reason for them to be dropped about? I think it is rather unusual, as there seem to be more than there have been other years.

June 13. W. S. SPARROW.

7. Strange Nesting-places of the Robin.—We receive so many accounts of "strange" nesting-places of this species—window-curtains, buffers of railway-carriages, &c.—that we doubt whether they are worth recording, or whether in this case the exception does not prove to be the rule, the abnormal, the normal.—ED. *N.N.*

8. Pikes and Ducklings.—On the banks of the lake in the beautiful and picturesque grounds of the Kilnwick Percy, a wild duck brought forth thirteen ducklings, which are reduced to seven (at the time I am writing) by the large pike which abound in the lake. When watching mother duck proudly sailing with her brood, you see a swirl and the number is reduced. Soon we shall be able to say "a big pike swallowed one, and then there were none."

June 10, 1903. ZENO.

9. Poplar Clearwing.—Many of the poplars here are bored by the larva of this moth (*Sphecia apiformis*); but though its work can easily be detected, it is difficult to take either the chrysalis or the perfect insect, and some of its habits are still unknown to me. A memo. in an interleaved copy of Stainton's "Manual of British Butterflies and Moths" reminds me that I have taken the pupa on July 11. It is provokingly difficult to see, and even when right under my nose will not let me find it. After hours of search I succeeded one July in securing two pupæ, one of which came out perfect, the other being maimed. A few days after this I again visited the trees, and found twenty or thirty pupa skins sticking out of holes in the bark, in the very part of the trees I had lately searched. The pupa case is strong and composed of particles of bark firmly glued together, and the end of it is level with the surface of the bark close against the ground, or within a few inches of it. The hole bored by the caterpillar is the size of a large pencil. Knowing exactly the time to search, and being baffled in my attempts to find a sufficient number of pupæ, I hoped to catch the perfect insect, a sluggish one, resting on the trunk of the trees, where one reads it is not infrequently found. In this my success has been but small. It appears to me to be probable that the moth, which flies in the day time, emerges from the chrysalis early in the morning, and then takes refuge some way up the tree; that it lays its eggs there; and that the larva eats its way downwards in the heart of the tree, turning to a chrysalis at the root, close to the edge of the ground. The perfect insect may be taken by fastening a piece of gauze netting to the ground and round the infested tree, at the end of June; but not every one is so circumstanced as to be able to prevent the curious from interfering with this simple trap.

EDMUND THOS. DAUBENY.

10. Bees.—Minute white material, apparently flakes of wax, may often be seen in front of hives tenanted by fresh swarms, and goes on in some profusion for several days. As the body of each bee produces only a limited amount of wax, this is a loss of valuable material, if my supposition that it is wax proves to be

correct. These flakes probably fall from the bees when clustered and engaged in making new comb; and are swept out by them from the floor of the hive. I wonder why it is that they do not collect and use them.

June, 1903. EDMUND THOS DAUBENY.

11. Large Cowslip.—In a meadow at Barningham, on May 2, I plucked a cowslip which had fifty-eight flowers on the stalk. I should like to hear if any reader of NATURE NOTES has found such a large one in any of his rambles.

Melford Bridge Road, Thetford. W. S. S.
June 13, 1903.

NATURAL HISTORY QUERY.

1. Dropped Eggs.—Five starling's eggs, three unbroken, partly hatched, were found a few mornings ago on the grass in my garden. How did they get there? There are many nests in the eaves of the house, and a great commotion was heard in one of them the evening before. We have several times found fresh starling and sparrow eggs on the grass and presumed them to have been laid there. WM. C. STAPLEDEN.

2, *Marine Park, West Kirby, Cheshire.*

SELBORNE SOCIETY NOTICES.

Council Meetings.—May 13. This being the first meeting of the new Council Elected at the Annual Meeting, the following were appointed officers for the ensuing year:—Mr. George Avenell, Chairman; Mr. J. L. Otter, Treasurer; Mr. Wilfred Mark Webb, Librarian; Mr. R. Marshman Wattson, Secretary. An honorarium of £15 was voted to the Secretary for past services. A hearty vote of thanks was passed to all members and friends who had contributed exhibits to the Annual Conversazione. The Publications Committee was re-appointed, and it was agreed that the pamphlet on "The Preservation of our Indigenous Flora," should be sent to the Chairman and Clerk of the County Councils and Borough Councils throughout England and Wales.

At the meeting on May 27, it was agreed to issue a double number of NATURE NOTES for June. The Council received with much regret the resignation of Mr. Basil W. Martin, F.Z.S., in consequence of his leaving London. In connection with the threatened destruction of cottages at Stratford-on-Avon, it was agreed that should a meeting be called, and the Chairman of Council be unable to attend, he should appoint a delegate to represent the Society.

The usual monthly meeting of the Council will be held at 20, Hanover Square, W., on Wednesday, July 22, at 5.30 p.m.

New Members.—A. W. Cobbold, Esq., Stoke Newington; Mrs. Bruce, Bury; J. S. Bale, Esq., Tufnell Park; Rev. H. Bernard Derham-Marshall, Norton Cannon; F. C. Stewart, Esq., New Broad Street, E.C.; A. Steele Sheldon, Esq., Burnley; Miss Blanche Snart, Hampstead; H. Plowman, Esq., F.S.A., Hampstead; Major E. F. Coates, C.C., Sutton; J. E. Lawford, Esq., Hampstead; Mrs. F. Mackenzie, Selborne; H. M. Piper, Esq., Ealing; Geo. A. Bernard, Esq., West Hampstead; Alan P. Gardiner, Esq., Alton; W. Lane Claypon, Esq., Hampstead.

Donations and Subscriptions.—The Council beg to acknowledge the following Donation:—W. J. Thompson, Esq., J. P., 5s.; Subscriptions over 5s.: J. Wilkinson, Esq., 10s.; G. A. Musgrave, Esq., F.Z.S., F.R.G.S., 21s.; Mrs. G. A. Musgrave, 21s.; Sir John T. Goldney, 21s.; F. C. Stewart, Esq., 10s.; Geo. Wheeler, Esq., 21s. (two years).

NEWS FROM THE BRANCHES.

Abinger and Shere.—On Saturday, April 16, Professor Boulger kindly conducted a ramble for this Branch. The starting point was Gomshall station, where several Selbornians met at 2.30. The party walked to Abinger Hammer,

where they were joined by a number of children belonging to the Band of Mercy, which is affiliated to the Branch. They then proceeded up Hackhurst Lane, and across Terry's Rough and Evershed's Rough, turning up to the Downs near the Bishop's Cross. After a pleasant walk on the Downs the party arrived at West Hackhurst about five o'clock, where a tea was provided by the Local Branch for all the members of the Band of Mercy, whilst Miss Forster, a former local secretary, had the pleasure of receiving the members of the Society as her guests. Several of these, being unable to take the walk, came for the sake of Professor Boulger's address, which was given after tea. The address was illustrated by the flowers Professor Boulger had gathered on the walk, and he pointed out the different kinds of buttercups and how to recognise them; and he also drew the attention of the audience to the methods of growth which enabled various plants to get rid of the superfluous rain, which would injure the leaves and stalks if it remained on them. The whole lecture was as interesting to the children as to their elders, and Professor Boulger was loudly clapped at the close of the address. The party broke up about 6.30, after an enjoyable afternoon, in spite of one or two slight showers.

The chief work of this Branch is to increase the interest in, and knowledge of, Natural History amongst village children, and to enlist their sympathies in the protection of birds and flowers. Professor Boulger has more than once called attention to the mischief done by digging up and by gathering even what seem common flowers in large quantities; and he has specially warned his audience to protect the orchids, which are the pride of the Downs, as where they propagate themselves by seed reckless gathering will cause them to disappear.

Bath.—The annual meeting of this Branch was held, at the invitation of Colonel H. M. Skrine and Lady Skrine, at Warley Manor, when there was a large attendance of members. Colonel Skrine took the chair, and in his opening remarks, after giving all present a very hearty welcome, said that they had paid him a very great honour in asking him to become their president. He did not feel at all worthy to hold such a responsible office, but he had always known what great interest and love his late father had always taken in the work. It had been one of the favourite hobbies of his later life, and, therefore, he (the speaker), out of respect to his father's memory, had very gladly decided to accept the office. For weeks before that annual meeting his father had always collected facts of natural history which would, he thought, be interesting to them. He himself had not been able to do that this year, but he hoped to be able to collect some facts of interest on the next occasion. The speaker concluded by giving a very interesting account of the habits of wood-pigeons, as observed on the estate, and also of the rearing of a young cuckoo which had been found in a nest on one of the terraces in front of the manor.

In presenting the accounts—in the absence of Dr. Norman, the hon. treasurer—Mr. W. C. Elwood (hon. secretary) stated that the year was started with a balance in hand of £45 3s. 10d. The sum of £38 11s. 11d. had been received in subscriptions, which was about £5 less than in the previous year, and after deducting all expenses, there remained a balance in hand of £49 19s. 11d., which was an increase of about £5. The annual report mentioned that during the year fifty-four members had left the Society, while forty-three new members had been enrolled. Thanks were due to the ladies who had contributed so much to the success of the Society, and to those who had given lectures and had conducted the various excursions. The report of the Natural History Section was presented by Miss Bryant.

General Coningham proposed the re-election of Colonel Skrine as president of the Society, remarking that no better selection could be made. The motion was carried with applause, and the Chairman having suitably responded, the Vice-Presidents, Preb. P. Norton Thompson, Preb. Tugwell, the Rev. T. P. Methuen, and Mr. W. J. Braikenridge, were also re-elected, as were the committee, the Rev. W. S. H. Samler, Major Edgell, Messrs. Leveson Scarth, M. H. Scott, E. J. Appleby, W. C. Elwood, Miss Bryant, and Miss C. Pedder. Dr. Norman was re-elected hon. treasurer, Mr. W. C. Elwood hon. secretary, Mr. E. J. Appleby hon. librarian, and Miss C. Pedder secretary of the Natural History Section. The district secretaries having been elected, Mr. Wilkinson remarked

that one of the objects of the Society was to discourage the wearing of birds and their plumage, except when the birds were killed for food or reared for their plumage. He had noticed that some members did not notice that object. A hearty vote of thanks was then passed to Colonel and Lady Mary Skrine for their hospitality, this concluding the meeting.

Tea was then served, and subsequently the members of the Society spent a very delightful time in rambling over the beautiful grounds of the manor.

Birmingham and Midland.—The Secretary's Report for 1902 has been published, the statement of accounts in which shows nearly £30 received in subscriptions and a balance of £4 in place of £1 on the wrong side last year. Lectures and excursions have been organised, and over 1,400 leaflets distributed in connection with the Country Holiday Society.

FIELD CLUB RAMBLES.

May 23.—Rickmansworth and neighbourhood. This was an enlarged version of the walk which took place on August 30 last year, and was under the same efficient leadership, viz., that of Mr. and Mrs. Douglas Wilson, so that those who had attended on the former occasion had the opportunity of renewing acquaintance with this favourite district. As before, the path lay first of all across Rickmansworth Park, where there was time to pause awhile and measure with the eye the Spanish chestnuts and limes for which the enclosure is famous. The latter, in truth, are of phenomenal size, and it is safe to say that most of the visitors had never previously viewed specimens covering so great an extent of ground. The greater whitethroat was in one continuous chatter, while chaffinches trilled it in merry mood, "sinking" now and then with more or less vigour, according as their nests were neared or quitted. Over the fields pewits indulged in aërial evolutions, uttering all the time their well-known cries; full of song larks rose against the dome of blue; and in eager flight swallows, martins, and screeching swifts swept up and down the vale. Hereabouts a blackbird had so abandoned its family traditions as to place its nest, which contained five eggs, under the big leaves of a burdock growing among the grass. Pleasant, too, was it to walk by the rippling Chess, and upon this occasion there was happily time to visit ancient Chenies—a place, it may be confidently asserted, not easily to be surpassed for charms. Church, trees, grass, manorial hall, all go to form a perfect setting. In the sacred fane the large Russell Chapel with its costly tombs claimed full attention. Leaving Chenies, the Selbornians took the path through the woods to Chalfont Station. In one of his essays Richard Jefferies wrote that "Where there are beech trees the land is always beautiful; beech and beautiful scenery go together." If his statement had needed confirmation it could easily be confirmed here. It was here that the blackcap's liquid notes were heard to great advantage. By Chalfont Station some of the visitors listened in the twilight to the melodies of a nightingale, but these were rather marred by the cries of a partridge and the notes of a near and insistent thrush

June 6.—Hayes and Keston were explored by fourteen members of the Field Club. The way led over Hayes Common, where *Hieracium Pilosella*, with its pale, yellow flowers, was found in abundance. *Galium saxatile* was noticed, and both *Stellaria Holostea* and *S. graminea* were observed in flower. A fine landscape was enjoyed from Keston corner, and then the party plunged down a steep lane to the right, which led between hedges and fields to Keston Church. Among the finds in this part of the ramble were *Thlaspi arvense* and *Helianthemum vulgare*, while the first wild roses of the season were seen and admired. Again turning to the left, after a short climb, the party reached the road and crossed Keston Common to the tea rendezvous, having enjoyed fine weather and a pleasant ramble.

Visit to Selborne, June 13.—Gilbert White died at the Wakes on June 26, 1793, so that the visit of the Society, in which, in spite of inclement weather, some forty members took part, may be considered a commemoration of the 110th anniversary of that event. Alton was reached about noon, and Selborne an hour later, after a drive through a deluge of rain. The Vicar, the Rev. A. Kaye, a Member of the Society, welcomed the party to Selborne and to Selborne Church, expressing his regret at the untoward weather. Beginning with the old yew tree,

the reverend gentleman mentioned that White had measured it 100 years ago, that it has increased two feet in girth since then, so that, though Professor Bell estimated its age as some 1,200 years—co-eval, that is, with the Saxon church—it was one of the most vigorous old trees in England. The Vicar expressed the opinion that the church doors were as old as the doorway, the ironwork being particularly good. The font also, although it bears no moulding or carving by which its date can be fixed, is very ancient, belonging probably to the original church. An antiquarian, whose opinion was worth having, had said that the orientation of the church suggested that it was Saxon, and some had thought the squareness of the tower to indicate the same date. The nave, however, is Transitional Norman of about 1150. Church and churchyard being on limestone, every grave that is dug necessitates pickaxe and crowbar. Attention was directed to the various monuments of the White family, and especially to the picture behind the altar given by Benjamin White just after his brother's death. An expert, who had recently examined it, pronounced it a Dutch work of about 1525, and considered it in need of restoration. This would cost from £30 to £40, more than Selborne could afford, and the Vicar suggested that some Members of the Society might be willing to assist in raising that sum. The party next examined the south chancel, formerly divided from the nave by an oak screen, and believed by Dr. Bell to have been the chapel of the Knights Templars. Two stone coffins of Templars were found under its floor, the skeleton in one of them having a leg-bone which had been broken and very badly set. The Vicar also produced one of the church registers containing Gilbert White's autographs during his curacies of the parish.

After lunch at the Queen's Arms, as the rain continued, the programme had to be modified; but, under the guidance of Dr. Bowdler Sharpe, the party visited the garden of the Wakes. The house is at present in the hands of the builders, and much regret was expressed that in his alterations the new owner has removed one of the original windows of Gilbert White's time. Some of the party attempted to scale the Hanger by the Zigzag, but the heavy rain-clouds obscured the view; and about 6 p.m., after tea at the Queen's Arms, the Members started on their return in bitter cold, though the rain had then ceased.

June 20. In spite of the lack of promise in the weather eight members of the Field Club met at Horsley. Following the footpath to West Horsley some fine specimens of cow-wheat (*Melampyrum pratense*) were gathered, then passing through the picturesque village where some of the cottages were duly photographed by one of the party, the southward road was followed between hedges interwoven with convolvulus, traveller's joy (*Clematis Vitalba*), wild hop and black bryony (*Tamus communis*). Dogwood (*Cornus sanguinea*) was plentiful and with its leaves already turning red, lent a pleasant diversity of colour to the foliage. Several specimens of the wayfaring tree (*Viburnum Lantana*) were seen, showing both flower and fruit. On a bracken-clad heath, foxgloves grew in great profusion and some fine specimens were gathered, one plant being over five feet high. Among other floral favourites found may be mentioned, purple fumitory (*Fumaria officinalis*), campions both white and red, blue milkwort (*Polygala vulgaris*), and the sweet-scented wild thyme. Birds also were plentiful, skylarks, thrushes, blackbirds and linnets being the chief performers, while the garden warbler, yellow-hammer, chiffchaff, and white-throats, both the lesser and greater, also lent their aid, and the nightingale was heard for a short time. Large flocks of turtle-doves were seen and many interesting bird-nests examined, but, of course, left unmolested. One in particular, built by a jenny wren, was much admired for its dainty workmanship and for the clever way in which it was hidden in the forking branches of a low bush. Of trees some fine white beams (*Pyrus Aria*) were seen, one grand old yew attracted attention, and a grove of beech trees called for notice, one tree being already covered with mast. The sun broke through the clouds as the party wound along the crest of the Downs above Shere and Albury, and the view, the finest to be seen anywhere within such easy reach of London, spread before the eyes of the Ramblers in all its matchless beauty. After this all were ready for tea, followed by a walk to Clandon, from which station the return to town was made. The whole ramble covered some eleven miles, but led through such diversely beautiful scenery that none thought it too far.

FORTHCOMING RAMBLES.

July 4.—Epsom and Ashtead. Train leaves London Bridge (L.B. & S.C.R.) at 2 p.m., Waterloo 2.47 p.m. Meet at L. & S.W.R. station at 3.30. This station is about ten minutes' walk from the L.B. & S.C.R. station. Take cheap return tickets, 1s. 6d. Tea at Mrs. Fenton's, near Ashtead Station. Guide, Miss E. Giberne. Particulars as to time of trains and cheap tickets should be verified from the July time-tables.

July 11.—West Drayton and Iver. By special request this ramble, which has been so much enjoyed in previous years, will be again conducted by Mr. Wilfred Mark Webb, F.L.S. Meet at West Drayton Station at 3.30. Trains from Paddington at 2.30 and 2.35, Ealing 2.44 and 2.51, Hanwell 2.57. The ramble will be along the banks of the River Colne to the Iver "Water Splash." Tea at Iver Village.

July 18.—Chertsey Abbey. Train leaves Waterloo at 2.28, arriving at Chertsey at 3.28. Change at Weybridge. Return fare, 3s. 4d. Ramble to Laleham by meadows and riverside. Mr. and Mrs. Gilbert Jennings, of the Abbey, Chertsey, kindly invite members to tea at 6 p.m., after which a short address will be given on Chertsey Abbey by Gilbert Jennings, Esq., B.A. After tea a visit will be paid to Chertsey Abbey and Ann's Hill, if time permits. Guide, Dr. Willson, of Weybridge.

July 25.—St. Albans. Train leaves St. Pancras 2.15, Moorgate Street 1.59, Kentish Town 2.21. Take cheap return tickets, St. Pancras 2s., Moorgate Street 2s. 3d., Kentish Town 1s. 11d. Meet Mr. W. Percival Westell, M.B.O.U., who has kindly promised to conduct the party, at St. Albans Station. The Abbey, Monastery Gateway, Verulanium Ruins, St. Peter's, and St. Michael's Churches, French Row, site of the Battle of St. Albans, and The Old Moot Hall, will be visited, and after tea a walk will be taken through Verulam Woods. Tea at 5.30 at the "Fighting Cocks Inn." The Cook's cheap excursion tickets are only available to return by the 8.40 p.m. train, but the time of this train should be verified at St. Albans on arrival.

August 1.—No ramble.

ANSWERS TO CORRESPONDENTS.

Miss J. K. Brinkly.—*Lychnis diurna.*

Mrs. Hodgson.—Apparently *Sedum anglicum.*

G. H. Goode.—The white-flowered form of *Pedicularis sylvatica* is uncommon. Thanks for the orchids.

Frances E. Martin.—The white form of *Prunella* is not very uncommon.

LETTERS RECEIVED.

Letters have been received from Rev. F. M. Millard, Mrs. Durrant, B. F. Cummings.

NOTICES TO CORRESPONDENTS.

1. All communications for NATURE NOTES must be authenticated with name and address, not necessarily for publication.

2. The return of an unaccepted contribution can only be guaranteed when it is accompanied by a stamped and addressed envelope. We cannot undertake to name specimens privately, to return them, or to reply to questions by letter.

3. All communications for any number must be in the Editor's hands by the 10th of the preceding month.

4. Communications for NATURE NOTES, books for review, specimens for naming, &c., should be addressed to the Editor, PROFESSOR BOULGER, F.L.S., F.G.S., 11, Onslow Road, Richmond, Surrey. But from July 25 to August 31, to care of Messrs. John Bale, Sons, and Danielsson.

5. For the supply of the Magazine to others than members address the publishers, Messrs. JOHN BALE, SONS AND DANIELSSON, Ltd., 83-89, Great Titchfield Street, London, W.

6. Letters connected with the business of the Society, subscriptions, &c., should be addressed to the Secretary, Mr. R. MARSHMAN WATTSON, 20, Hanover Square, W.

Nature Notes:

The Selborne Society's Magazine.

No. 164. AUGUST, 1903. Vol. XIV.

OBJECTS OF THE SOCIETY.

To preserve from unnecessary destruction such wild birds, animals and plants as are harmless, beautiful, or rare. To discourage the wearing and use for ornament of birds and their plumage, except when the birds are killed for food or reared for their plumage. To protect places and objects of antiquarian interest or natural beauty from ill-treatment or destruction. To promote the study of natural history.

SELBORNIANA.

South-eastern Union of Scientific Societies. — The eighth Annual Congress of this Union, which was held at Dover from June 11 to 13, under the Presidency of Sir Henry Howorth, K.C.I.E., F.R.S., was in every respect equal in value and interest to any preceding meeting. The Mayor and Corporation placed the Town Hall at the disposal of the Union, and the Mayor welcomed the members at a charming conversazione held, according to custom, on the second evening of the Congress. The meeting began with a most stimulating, if characteristically heretical address from Sir Henry Howorth, and lectures were given on International Communication by Mr. A. T. Walmisley, Engineer to the Harbour Board; on Leprosy in India, by the retiring President, Dr. Jonathan Hutchinson; on the White Chalk of Dover, by Dr. Rowe; and on a Keltic cemetery at Harlyn Bay, by the Rev. R. Ashington Bullen; the two last-mentioned admirably illustrated by lantern slides. A visit was paid to Dover Castle and to the Admiralty Harbour works. But of more immediate interest to the Selborne Society, which is affiliated to the Union, and was represented on

this occasion by Mr. E. A. Martin and Professor Boulger as delegates, were a paper on atmospheric moisture as a factor in distribution, by Mr. A. O Walker, a comparison, mainly entomological and botanical, of Cheshire and South-east England,

Musk Mallow (*Malva moschata*). Common Ivy (*Hedera Helix*).

Opposite fig. 1 is the ripe seed.

Opposite fig. 2 is the cotyledon. The oval form of cotyledon appears to be the commonest. By comparing 44 natural orders, representing about 200 species, I find roughly that the prevalent forms in 18 orders are oval; in 12 orders are rounding; in 5 orders are strap-shaped; in 9 orders are angular, cordate, &c.

Opposite figs. 3, 4, 5 are the first leaves. It is noticeable that the first leaves get more and more complicated and elaborate in outline in the successive stages until the commencement of the flowering period; they then become simpler in outline until the floral leaves and bracts are reached, which very often greatly resemble the first leaf or even cotyledon. This is well seen in Figs. 2, 3, 9 and 10 of *Hedera helix*.

Opposite fig. 6 is the separate flower.

Opposite figs. 7 and 8 are mature and immature fruits.

Opposite fig. 9 is the flowering plant.

Opposite fig. 10 are separate leaves to show perfect outline, &c.

one on the seedlings of geophilous plants—plants, that is, which are mainly underground for most of the year—by Miss Ethel Sargant, and one on the diminution and disappearance of the south-eastern flora and fauna within the memory of present

observers, by Captain McDakin and Mr. Sydney Webb. This last paper contained a mass of interesting detail, the result of thirty years' observations, noting, *inter alia*, the loss of the raven, of some plants by encroachment of the sea, and of *Eryngium campestre* owing to golf, besides the serious reduction in the numbers of many animals and plants of all classes. In the discussion of this paper Professor Boulger read the resolutions of the Cotteswold Naturalists' Field Club, printed in the June number of NATURE NOTES, and a letter from Mr. G. Claridge Druce, F.L.S., who was unable to be present. Under the skilful organisation of Mr. E. W. Swanton, Curator of the Haslemere Museum, a most successful temporary museum was arranged in the Town Hall, including, among other things, a magnificent series of British lepidoptera showing specific variation, lent by Mr. Sydney Webb; part of Mr. A. O. Hume's herbarium, prepared by Mr. W. H. Griffin; and some sheets from the herbarium prepared by Mr. B. T. Lowne, of Catford, to show as far as possible the whole life-history of the plant. By the kindness of Mr. Lowne we are able to give here reduced photographs of the sheets illustrating the Musk Mallow and the Common Ivy, of which the following is the explanation :—

Members may be reminded that they are entitled to become members of the Union, and to receive its annual volume of Transactions, on payment of 2s. 6d.

THE NATIONAL TRUST FOR PLACES OF HISTORIC INTEREST OR NATURAL BEAUTY.—Considering the excellent Eighth Annual Report that the Council of the National Trust had to present, it is not surprising that their annual meeting, on July 10, under the presidency of H.R.H. Princess Louise, Duchess of Argyll, was successful. Seventeen estates, comprising in all nearly 160 acres, including a priest's house, two trade halls, two castles, a sanctuary cross, and three monuments, to say nothing of six priceless views and a fragment of primeval fenland, are no bad record for eight years' work, especially when we learn that the maintenance of these estates is provided for. Caution is most necessary in such work; but we hope the Trust will show no timidity, where the interests of the beauty of our country are at stake, in saddling themselves with the care of many more acres of land. If Stonehenge and Tara may become national property independently, and Snowdon has escaped their protection, Dartmoor, Cheddar, and many another beauty spot still need at least careful watching by this body, the basis of which has undoubtedly secured public approval.

PRESERVATION OF STONEHENGE.—The Wiltshire County Council having suggested that the cost of an action involving such far-reaching principles as the preservation of the right of public access to Stonehenge should be borne by the public generally, the Commons and Footpaths Preservation Society has been forced to appeal for funds to enable the grievance of the

public to be placed before a court of law. The Society has determined to endeavour to raise a guarantee sum of £2,000 to provide against every possible contingency, although this sum will probably not be needed, as the Society is advised by several eminent legal experts that it can expect to establish the public rights. Already the members of the Society have guaranteed £1,000 of the sum needed, and an appeal is made to the public for the remaining £1,000. This action is not being taken in any vindictive spirit against Sir Edmund Antrobus, but merely to prevent the right of public access to Stonehenge lapsing through disuse. Those in sympathy with the object of the fund may send their contributions to the Commons and Footpaths Preservation Society, 25, Victoria Street, Westminster.

East Cliff, Hastings.—Almost all that remains of beauty or picturesqueness at Hastings is connected with the East Hill; so that the proposal to tunnel through this hill to bring a line of railway to the Harbour was naturally viewed with apprehension by all lovers of our southern coast. Under pressure from the Corporation of Hastings, the local M.P., and the Commons and Footpaths Preservation Society, the promoters have agreed to modify their scheme so far as to cover over the contemplated sixty foot cutting on the inland slope of the hill. The mouth of the tunnel will still mar the face of the cliff, and the line will block the way eastward by the beach, while tunnelling operations may do much, by shaking the loose material of this cliff-line, to counteract any advantage which a sea-wall may be as a protection against coast erosion. We must, however, presumably, be thankful for small mercies.

The Bearing-Rein.—"Some philanthropic body, supposed to be the Humanitarian League, has taken a very effective, if expensive, method of prosecuting the crusade against the bearing-rein. Yesterday many of the hoardings displayed a poster of large size, which even among the clamorous demands of soaps and patent foods and musical comedies attracted notice. It asks —in big type—'Why drive with a bearing-rein? It means—Less Power, Less Grace, Less Freedom.' And in order to give verisimilitude to the appeal, coloured pictures of three horses are exhibited. The first, without a bearing-rein, entitled 'Comfort'; the second, with a modified bearing-rein, 'Discomfort'; and the third, with a rein such as the fashion demands, labelled 'Torture.' The uses of advertisement will be sweeter than usual if in this instance they achieve a victory over forces which have hitherto proved too strong for ordinary means of appeal."—*Daily Chronicle.*

"Snake-feeding at the Zoo.—It will be good news to humanitarians who have been protesting against the feeding of snakes on live animals, to learn that the authorities at the Zoological Gardens are now carrying out a suggestion recently

made in the press, and are feeding the larger serpents with newly-killed rabbits and poultry instead of with live ones. This is the plan adopted in the New York Gardens, and it is believed that it will in nearly every case be successful. The new Secretary of the Zoological Gardens is to be congratulated on his enterprise."—*The Animals' Friend.*

"Protection of Coast Birds.—We are glad to hear that the Admiralty has sanctioned the co-operation of the coastguard in carrying out the provisions of the Wild Birds' Protection Acts. This is likely to prove a most useful step for the protection of sea-birds especially. We understand there are 677 coastguard stations, and the knowledge that there is a possible watcher at each cannot but act as a deterrent on many a would-be law-breaker. Our friends on the coast should do all they can to make the fact known, and also to arouse the personal interest of the coastguardsmen in the subject."—*The Animals' Friend.*

A Costless (?) Garden. — A correspondent directs our attention to an article in the *Daily Mail* for July 20, in which a lady describes how she stocks her garden with wild flowers, getting orchids from Box Hill, ferns from Devon, and primroses from Sussex and Lancashire! She recommends others to follow her example in thus getting together a garden without cost, never for a moment considering that were this a general practice the cost to the community at large in the loss of the beauties of wild Nature entailed thereby would be a serious one. We doubt if the writer will have any success in her suburban garden with the man and bee orchids sufficient to justify even to herself the removal of these beautiful plants from their native haunt.

The Home Counties Nature-Study Exhibition.—Though the place is not as yet absolutely determined, the date of this exhibition has been fixed for October 28 to 31.

A Protest.—We have received the following from Mr. Harold Hamel Smith:—

"I have just read in your July issue Mr. E. A. Martin's protest against the four parrots and one peacock skin exhibited at the Conversazione of the Selborne Society on May 5. As the exhibitor of those birds I shall be much obliged if you will let me comment on this protest.

"First, I would point out that Mr. Martin appears to doubt whether parrots and peacocks are injurious to the crops; if so, he could easily ascertain that they are by turning to any work on the Natural History of India or to the publications of the India Museum, and he will learn that parrots are universally regarded as pests in India. In a communication received by my firm from the Indian Government they acknowledge that the prohibition extends to wild birds that are injurious to crops, and

are killed for food. The protest would lead one to believe that the Indian Government has simply 'prohibited the export of birds' skins and plumage for millinery purposes' only. This is not the case. The prohibition covers all feathers, except ostrich feathers (which do not come from India) and *bonâ-fide* natural history specimens. Such items, for instance, as wild duck feathers suitable for bedding could not legally be exported.

From my knowledge of the Selborne Society I am sure the bulk of its members are free from all sentimental and impractical prejudices, and that they certainly would not object to have their attention directed to both sides of the question. My reception at the conversazione confirms me in this opinion, especially in the conclusion that the Council would always take an independent course of its own, uninfluenced by the views of any other body.

"In exhibiting the birds I must own I did not give the Selborne Society the credit of having the influence to modify the order in Council of the Viceroy of India in any way, and all that I hoped to do was to show by means of an object-lesson the mistake that had been made in refusing to allow the skins of such birds as parrots to be exported, since being a pest, they are still being killed the same as sparrows in England; but the skins and feathers can now only be thrown away, and though to us the one or two 'pies' the skin is worth would seem ridiculous (twelve pies being only equal to an anna = one penny), to starving India it is worth running after. I was particularly careful not to show egrets, paddy birds, argus or impeyan pheasants, &c., whose destruction might be considered unnecessary. One of our Indian friends writes: 'Although the Indian Government has stopped the export of bird skins, it still continues the outrage of killing the milk-giving cows, which is greater than killing birds. In these days rajas, nawabs, and many English and natives come from distant countries to Punjaub and other provinces to hunt birds of all sorts, but the most of the population of India who depended on it now cannot do it.'

"In conclusion, I would ask why has this protest appeared so late in the day, two months after the conversazione? Was this protest lodged at an early date with the Council, and has it only now been allowed to be published; or, as is more probable, is it that I am being used as a stalking horse to attack the Council? If so, I must protest against the unfair use Mr. Martin makes of my harmless exhibit."

AN HOUR AMONGST THE FAUNA OF ASH ISLAND.

I MIGHT imagine myself a hundred miles from smoky old London, as I sit on the bank of this little island under the leafy branches of a fine old willow, listening to the sweet love songs of the thrush, blackbird, reed warbler, willow wren and many other kinds of feathered choristers, and watching the shoals of dace, roach, and bleak finning their way up the rapid and crystal-clear backwater which flows babbling along at my feet to rejoin old Father Thames.

And yet, as doubtless many of the readers of NATURE NOTES are aware, Ash Island lies within a stone's throw of Molesey Lock and Weir, and even when measured along the serpentine course of the river, the distance from the islet to London Bridge is only twenty-four miles. Many people appear to imagine that the islands and eyots of the Upper Thames are public property, or at any rate that boating parties have a perfect right to land and stay as long as they choose upon any of the islands in question. Such, however, is not the case, for every square foot of the islands is private property: indeed, even after having obtained permission to explore Ash Island, not only did I find notice boards placed at every landing place setting forth that "Trespassers will be prosecuted," but also that a particularly spikey barbed-wire fence was erected completely round the island to prevent persons landing thereon. After a good deal of trouble, however, I managed to negotiate the obstacle, and it was not long before I came across what is known to sportsmen as the "spur" (footprints) of an otter in the clayey soil of the river bank, and after a somewhat lengthy hunt I found the remains of a half-eaten chub of about ¾ lb. weight lying in a clump of rushes. The chub had evidently formed a part of the otter's supper the preceding night, for it had not been out of the water many hours, but search around the banks in my punt, as I afterwards did, I failed to hit upon the "spur" again; but then an otter will often travel many miles in a night, especially at this season of the year.

Tying up my punt, I again crawl through the barbed-wire fence, tearing my jacket in more than one place during the ordeal, and then having lighted my favourite old pipe, I sit down under my willow to listen to the songs of the birds and to the roar of the weir-fall. I have not taken half a dozen "whiffs," when to my delight a kingfisher settles on a branch of the willow over-hanging the water, within a few yards of my resting-place, and his glorious iridescent plumage vies with the rainbow in point of colouring, every feather on his compact little body glinting brilliantly under the bright rays of the afternoon sun. The branch he has perched upon hangs immediately over a shallow in which I can see schools of tiny fry, and a few small dace

and bleak. Master kingfisher also sees them, and like an arrow he darts into the water, and emerges a moment later with a half-inch fish transfixed on his pointed shapely bill. To my regret the beautiful bird does not return to the willow bough, but like a flash of blue lightning he flies along the bank carrying his catch crosswise in his bill.

I was told by the assistant lock-keeper that three pairs of kingfishers used to build annually in the banks of Ash Island; but, alas, before the Thames Conservancy put a stop to shooting on the Thames, the cockney sportsman waged such inveterate war against the birds on this part of the river that I fear it would prove a difficult matter to find three pairs of kingfishers between Sunbury and Molesey Locks nowadays. A pair of long-tail titmice next pay a visit to my willow, and with merry twitterings hunt amongst the crevices of the bark for the insect life harbouring therein. A few minutes later three blue tits join their small and more soberly plumaged cousins, and they also begin to search every nook and cranny for flies, beetles, larvæ, &c., now spinning round a decaying branch, and now crawling along the trunk, head foremost or downmost as fancy guides them. They are male and female, and it is delightful to watch the cock bird feeding the hen with all the choicest morsels he can find, and as he gently places a fat scolytus beetle or grub in her beak she bows her pretty little head as though to thank him for his affectionate and unselfish attentions. The "long bobs" and blue tits at length wing away to another happy hunting ground, and for a time I am left in solitude, but my attention is suddenly attracted by a small dark brown animal creeping along the bank on the opposite side of the water. The little creature has a round, blunt head, very much like that of a miniature beaver, and a white-tipped tail of about half the length of that of the common or Norwegian rat. He is a water-vole, and not, as he is commonly called, a water-*rat*, and lives entirely upon vegetable food: indeed, as I write he is nibbling away at the white succulent part of a kind of bulrush, which he daintily holds between his fore-paws. The water-vole is, in my humble opinion, a great feature in our English rivers and streams, and it seems a thousand pities that the average water-bailiff and game-keeper cannot, or will not, learn that the vole is purely and simply an herbivorous animal, and does absolutely no harm to either fish spawn or game eggs. As I sit smoking and watching the rodent at his evening meal, the sweet song of a reed-warbler gladdens my ears, and peeping into a thorn-bush near at hand I can plainly see the delicate-looking little bird pouring out his love song while his mate sits on the same twig within a few yards of him preening her feathers in the most unconcerned manner possible, like the little coquette she is.

The song of the reed warbler ceases abruptly, and the water-vole drops his bulrush salad and takes a "header" into the stream. For a moment I imagine some movement on my

part is the cause of all this, but looking skywards I discover a sparrow-hawk hovering silently over the thorn bush, and within twenty yards of my resting place, and then I know that he and not myself is answerable for the disturbance amongst the feather and fur of the island.

I am scarcely able to distinguish the warblers from the foliage of the bush, for they are making themselves as invisible as possible by crouching in the thickest part of the leaves. Ah! the quick eyes of the hawk have sighted me, and with a swift downward swoop, as though about to strike the scared little birds on their perch, he flies off; but before he has gone very far quite a flock of small birds, including the reed-warblers, are following in his wake shrieking out their cries of hatred as they go. Apparently heedless of the rabble, the sparrow-hawk continues on his swift flight in a "catch me who can" sort of manner, and pursuers and pursued are soon lost to sight behind a line of tall willows as they cross the main river. I must depart also, for the wind grows chill and the sinking of the fiery red sun behind the grand stand of Hurst Park racecourse heralds in the advent of night, and if that weather prophet, the shepherd, is to be believed, it will be fine to-morrow.

M. BURTON-DURHAM.

A GARDEN OF NEREUS.

AST August we were fortunate enough to be able to watch some of the children of Nereus in their natural habitat.

We were in the neighbourhood of Scott's "Bride of Lammermuir," walking by the sea margin, where the Kelpies' Flow is still evident by its quicksands. Away in the distance, jutting out into the sea, Wolf's Crag stood out in relief against the clear summer sky. From a sandy cove close by the Kelpies' Flow we clambered over rough bare rocks, up to the beautiful verdure-covered cliffs, looking on to the sea. Along a sheep track we made our way, with the shore-line lying below us during our walk. The tide was low and showed shaley red rocks, lying like rows of fallen giants, in horizontal lines of great regularity, over which the white-lipped waves were pleasantly and rhythmically lapping. At Siccar Point, where the cliffs project seaward in a great wall of rock, we left the grassy pathway and scrambled down to the sea. Under the cliffs we found a large roomy cave, reputed to have been used by smugglers in days gone by, which, although easily accessible and quite dry at low tide, has the sea for its floor and its walls hammered by the surf during the spring tides. In this cave numbers of martins had built their nests of brick-coloured mud, made from the red sandstone. Pretty little

nurseries they were, with a half-moon shaped hole for exit and entrance.

Our presence caused much consternation, and clouds of martins flew backwards and forwards before the entrance of the cave. Now and then a bold bird would dash in past us to pay its nest a hurried visit and then dash out again to join the other alarmed parents. After a time the birds seemed to become accustomed to our presence and openly returned to their nests, when an incessant chattering ensued, which suggested that the parents were entering into explanations with their little ones. In the flat conglomerate rocks to the left of the cave we came across a great pot-hole filled with water left by the tide. The hole was about two yards in diameter and perhaps the same in depth, with a surface fringe of fine green seaweed, and lower down on the sides bunches of coarse brown fucus had taken firm foot-hold. The water was beautifully clear and showed quite plainly the bottom lined with pebbles and sea-worn pieces of rock. As our shadows fell across the pool we noticed some swift movements in its depths, but on looking to see the cause, nothing living was visible among the still stones. We sat ourselves down to watch developments, feeling quite convinced that some living creature had been there a few moments before. Presently from the shade of the fucus darted out three small gurnets about four inches in length, and immediately afterwards from under the shelter of the stones at the bottom, some small crabs cautiously crawled out. From one of the larger recesses two large claws heralded the appearance of a lobster. He came out slowly and warily, and was followed by another and yet another of his kind. Soon the bottom of the pool was alive and moving with crabs and lobsters. Evidently, for some time past, the sea had not been high enough to reach this spot, for the rocks around were bare and dry, whereas, as far up as the then high-water mark, mussels formed a thick incrustation.

As soon as the crustaceans emerged from their hiding places they began to feed. With their claws they nipped off from the stones the scanty confervoid vegetation and conveyed it to their mouths as though they were starving.

They fed themselves very much like a child does, sometimes using the right claw as a hand, sometimes the left, and sometimes both claws went to the mouth at once, reminding one of a greedy boy cramming his mouth with his two hands. One lobster caught hold of a long branch of brown fucus with his left claw, as though to steady himself, and with the right claw picked away at the seaweed and carried the portions to his mouth. Soon, however, a movement in the water washed the fucus away from the left claw and beyond the creature's reach. The lobster, as soon as he realised his loss, stretched out both claws towards the recreant weed so imploringly, that the action seemed almost human.

The gurnets had many narrow escapes, for their armoured

neighbours made attempts to seize them every time they ventured near.

From under a projecting ledge of rock a new form appeared —a starfish (*Uraster rubens*). Warily it made its way out of its hidden corner into the light. As it moved slowly along, its back was humped up dome-shaped, for it seemed to use the tips only of its five arms in locomotion. At the edge of the recess and before, as it were, turning the corner, it lifted up one arm and kept it raised for some moments, as if to give a look round before venturing further. Finally, down went the arm, the disc flattened out, and the creature remained stationary during the rest of our watch.

We felt so sorry for the starving creatures in the pool that we crushed some mussels and dropped them into the water. It was quite amusing to see the commotion which followed. The gurnets dived after some of the dainty morsels, and having secured pieces of flesh to which particles of shell were attached, shook them in their mouths like a dog, to rid them of the hard fragments.

The crabs and lobsters snatched at the food as it sank, and then rested quite solemnly, meat in one claw, picking and feeding themselves with the other. Their hunger satisfied, one by one they retired beneath the stones. Two lobsters, evidently strengthened and emboldened by their luscious repast, met face to face in front of a favoured recess. Instantaneously out came both pairs of eye pegs and the warriors glared defiance at each other. Both retreated a few steps, then advanced and glared anew. These actions were repeated two or three times, when the smaller warrior turned tail and hid himself beneath a stone a little distance off, while the larger one triumphantly took possession of the coveted nook.

Our interest in the pool disappeared with the lobsters and crabs, so we now directed our gaze seaward. Far away to the horizon the blue lines of the great strong sea extended, unbroken by sign of ship or sail. Near the shore, ridges of rock rose above the surface of the water like the back fins of some huge sea monsters, and over these ridges the waves played and formed a white lacework of foam which tumbled over in tiny silvery cataracts and rejoined the sea. On some of these rock ridges sea birds sat solemnly in rows. Four great cormorants rose from fishing in the sea and took possession of one ridge. As though at a given signal the four birds spread out their wings, stretched out their long necks and then spun round and round like teetotums, perhaps to dry themselves. They looked perfectly ridiculous during these gyrations, but finally they settled themselves down quietly, but with the wings still outspread.

Some time previously we had heard what sounded like a shot in the distance, and just as the birds had ceased their antics, a boat, containing four men, came cautiously round the rocks on

our left, and made towards the cormorants. Two of the men had guns shouldered ready to fire. When we realised this we shouted and clapped our hands to startle the birds, but our voices carried a very short distance, and the unsuspecting birds sat on. Bang! bang! went the guns. The four birds rose, and to our great relief flew away unhurt.

S. D. W.

SOUTHERN GULLS.

IT is a frequent enough sight to behold the graceful terns and heavy gannets diving in the waters of Bass's Straits for their finny prey; but not so often does one catch sight of the bold Pacific gull taking headers into the briny in search of sustenance. Its more frequent plan is to dodge along the beach just at the edge of the receding tide, or along the sandbanks in the estuary of our river, capturing small crustaceans or fish which become stranded in the shallow water. One morning last week, however, we were favoured with a view of about twenty of these fine birds congregated in a little bay inside the river's mouth, and making things very lively for each other, or any other bird that came into their vicinity. It seems that a number of large fish had been cleaned at this spot and the birds were massing there with a view to a banquet on the remains. One would spring up two or three feet from the water, incline its head downwards, and then dash boldly beneath the surface, never failing to reappear in a second or two with the portion which had been dived for, but which the possessor was never allowed to devour in peace. Its reappearance on the surface was the signal for one or more other gulls to make a dash and capture the coveted morsel, and there would ensue a free fight until one got away to the middle of the river: even there one bird more tenacious than the rest would generally pursue the robber, and they would soar up and dash down until the pursuer got wearied and rejoined his noisy comrades, or until the pursued dropped his mouthful, leaving it to the tender mercies of the pursuer.

This diving and the immediately-following assault were constantly going on, amid harsh cries and scurryings round and round, making a most interesting scene to the naturalist's eye. In and out among the big Pacific gulls would dash the beautiful and fearless little silver gulls (*Larus Novæ-Hollandiæ*) with their white throats and bosoms, silver grey wings, and pink bills and feet, forming a charming picture. Their larger brethren have somewhat of the skua about their appearance and habits, and their thick overhung beaks can deal a savage blow: in fact, only recently the Pacific gull in New Zealand has been accused of sheep-killing. The plumage varies greatly, that of the young

bird being mottled grey and brown with dark beak and legs, whilst when the full plumage is attained the bird shines forth with snowy head, throat, and breast, wings almost black, and orange beak; between these extremes may be seen all varieties, one merging into the other, in such a group as that depicted above.

Tasmania. H. Stuart Dove, F.Z.S.

REVIEWS AND EXCHANGES.

The Insect Folk. By Margaret Warner Morley. Illustrated by the Author. Ginn and Co. Price 2s.

There are very few pages in this attractive children's book which we do not like. One of them, at the beginning, bears in large black type the words Odonata Ephemerida Plecoptera Thysanura. These and other equally out of place technicalities are explained in a Glossary, which might well have been rendered less necessary. But everything of this kind can apparently be readily ignored, and we have nothing but praise for the charmingly told and illustrated life-histories of the three dozen or so of insect types. The whole swarms of dragon-flies, May-flies, and grasshoppers crossing the pages are delightful; and though some of the types selected are mainly American many an English reader of Transatlantic literature will be glad to learn more of the Katydid. The Lepidoptera and Hymenoptera are omitted—for treatment, we hope, in a companion volume—and we could willingly have dispensed with the two or three pages devoted to some members of "The Great Bug Family," though country children will be pleased to read about the Water Boatmen and the Aphis. If somewhat too directly didactic, there is much that is refreshingly original in the whole treatment of the subject.

Ways of the Six-Footed. By Anna Botsford Comstock. Ginn and Co. Price 2s.

This volume is intended forsome what older readers than the one just noticed. It comprises ten stories of insect-life "written with the definite purpose of illustrating the great primal truth that wherever there is life there are problems confronting it; and that the way of solving these problems has been the way to success in the evolution of a species." The musical organs of various insects, protective resemblance, the perfect socialism of bees, ants and termites, and the leafy tents constructed by the miner are among the topics thoughtfully described from personal observation, with the inspiration of a poetical naturalist such as Fabre, rather than the parabolical morality of Mrs. Gatty, or the mysticism of a Maeterlinck.

Geological Rambles in East Yorkshire. By Thomas Sheppard, F.G.S. Illustrated from Photographs, with a Coloured Geological Map of the District. A. Brown and Sons. Price 7s. 6d.

Yorkshire can boast of a series of great geologists, from Adam Sedgwick and John Phillips downward, and so varied are the formations exposed along its coastline that we are not surprised at the appearance of this volume of geological rambles dealing exclusively with one of its Ridings. The book is thoroughly practical, wasting no space in fine writing, but carefully describing the country bit by bit, from the Humber to Scarborough, supplementing some fifty admirable photographs with outline diagrams and mentioning many of the more important fossils. Much of the matter has previously appeared in the *Leeds Mercury Supplements* during the last three years. Might we suggest, for a second edition, the addition of a list of published maps and sections and at least a select bibliography of books and papers on the district?

The Educational Value of Nature-Study: an Address by J. C. Medd, M.A., delivered at the Conference of the Private Schools' Association, June 20, 1903. Cirencester: G. H. Harmer.

As Mr. Medd says, it is difficult for anyone to say anything new on this subject, and for one who has taken so leading a part in advocating the introduction of this educational method as he has, doubly difficult. He manages, however, to make a fresh and forceful appeal for his hobby, and we are glad to see a feeling allusion to the life-work of the late Mr. Rooper. Mr. Medd will excuse us if we choose for quotation an excellent sentence from a Canadian educationalist. The teacher, he says, "must have seen Nature in her scientific aspects, that his knowledge may be definite; in her artistic aspects, that her beauty and harmony may be appreciated; in her spiritual aspects, that he may read her message, see the unity in all life, see her as the flowing vestment of an unchanging reality."

Le Massacre des Oiseaux: Appel aux Femmes. Par Mlle. P. Lagier, fondatrice de la Ligue Féminine Romande. Geneva. Messrs. Kündig.

This 32-pp. pamphlet contains Mdlle. Lagier's address to her anti-plume league, delivered at Geneva on March 5, a leaflet, "Ce que représente l'aigrette du Héron sur un chapeau," another, "L'oiseau du Paradis," based upon that by Mrs. Lemon, and the rules of the League. These are distributed gratuitously from the office of the League, 4, Rue du Vieux-Collège, Geneva. The League has circulated translations of Mrs. Reynolds' "Necessity of a Humanitarian Education," Miss Celia Thaxter's "Hardness of Women's Hearts," and Mr. Salt's "Animals' Rights," and it can boast of having originated a similar league in Moscow. Its rules seem closely modelled on those of our own Society for the Protection of Birds, its minimum annual subscription being but a franc.

Field Path Rambles, Series 25, *comprising Routes round Canterbury.* By Walker Miles. R. E. Taylor and Son. Price 1s. net.

Taking Canterbury as a centre, but, true to its title, devoting only two pages of small print notes to the archæological interests of the city, this welcome little addition to the excellent series we have so often had occasion to praise, describes numerous routes for the pedestrian through the surrounding country. Sixteen pretty photographic views and sketch-maps of the city and the neighbouring railroads make this series as complete as usual.

Furthest South: The Adventurous Voyage of the "Discovery," and the Sledge Journey to the Furthest Point South ever reached by Man. By Lieut. E. H. Shackleton. Supplement to the *Illustrated London News*, June 27, 1903.

This is the first half of a fully-illustrated narrative of the doings of an expedition in the success of which every Briton must feel an interest.

Public Works.

We have as yet only seen a prospectus of the new shilling monthly magazine with this title, which is about to appear under the conduct of the editor of *The Surveyor*. It is printed with all the typographical skill of the St. Bride's Press, fully illustrated and enclosed in a tasteful cover representing the Pont du Gard. We hope this is an augury that the preservation of the beautiful will not be overlooked in the pages of our new contemporary.

Spurious Sports considered from an Educational Standpoint. By the Rev. H. B. Gray, D.D., Warden of Bradfield College. Humanitarian League.

If there is nothing very novel in Dr. Gray's address, its temperate attitude, and the high scholastic authority of its author, may command a hearing which others might fail to secure.

The Butterflies and Moths of Europe. By W. F. Kirby, Parts 31 and 32. Cassell and Co. Price 7d. each.

These parts conclude this splendid work. The last part contains an index of genera and species occupying seventeen pages, printed in four columns, and the preface fully acknowledging indebtedness to continental illustrations. The forms

peculiar to Madeira and the Canaries are included, though no pretence is made of treating the Micro-lepidoptera as a whole. We congratulate author and publishers alike on a first-rate achievement.

The Humane Review for July, with other interesting articles, contains a paper by Monsignor Canon John Vaughan, in which he corrects the defective logic of the Rev. Wilfrid Lescher, O.P., who argues that "if animals have no rights, it follows that there is no such thing as cruelty to animals, or that cruelty to animals is not wrong."

The Naturalist for July is a double number containing three portraits and two other plates.

Received: *Bird Notes* for June; *Board of Agriculture Leaflets*, No. 85, *Haymaking*, No. 86, *Brown Rot of Fruit*, No. 87, *A Fungous Disease of Young Fruit-Trees*, and No. 88, *Hop Aphis; The Victorian Naturalist* for June; *The Animal World* for June and July; *The Irish Naturalist*, *The Humanitarian*, *The Animal's Friend*, *Our Animal Friends*, *The Parents' Review*, and *The Agricultural Economist* for July.

NATURAL HISTORY NOTES.

12. Is Nature Cruel?—With reference to the interesting article in the June number of NATURE NOTES, "Is Nature Cruel?", I fail to see that in either of the cases noticed there is evidence of conscious cruelty on the part of either insect, bird, or animal. In each case it appears to me that the actor is only surely showing its natural instinct for self preservation, and for the preservation of its species. It may be, but it may not be, conscious of causing suffering in the carrying out of its instinct.

As to dogs biting and cats scratching—is not each action the animal's way of showing its dislike to certain behaviour of either friend or foe, and as possibly indicating danger to it?

35, *Evelyn Gardens, S. W.* ALICE A. HOWES.
June 29, 1903.

13. Sexes of White Stoats. In reply to Mr. G. T. Rope in June NATURE NOTES, I, too, cannot see why the seasonable change of colour in this animal should be confined to one sex, as both equally need protection. The specimen I have appears to be a gill. A keeper who shot one here last winter is not able to determine the sex, but is inclined to think it a hob.

Rhyl. F. L. RAWLINS.

14. Flycatcher. — In this district of Northants the flycatcher is very abundant; there are always six, and sometimes seven, pairs in the churchyard and the rectory grounds alone, and that the same birds return is evident. For four years they have built over a mural tablet outside the church, and are at present sitting for their second brood in the same nest.

For several years I noticed a clutch of abnormal pure blue eggs on the side of my house. One year (1898) they were absent, but Sir Charles Isham of Lamport Hall found them four miles off as the crow flies, and they returned here the next year (1899) and also in 1900 and 1901, and doubtless since then.

Haselbeech. W. A. S.

15. Birds of Prey.—I and two brothers were sitting on our lawn when we heard a sparrow screeching with terror in some shrubs near, and seeing a large bird fluttering there, I ran to see what was happening, when a jay flew up into a tree with what looked like a full-grown sparrow in its bill: the piercing screams had stopped. Hoping to make the jay drop the bird I frightened it, instead of which it flew away to enjoy its repast elsewhere. The shrubbery where this happened is within twelve yards of the house. Another day my brother saw a cuckoo chasing a chaffinch as if determined to catch it. Has the lack of insect food this year anything to do with this cannibalism?

16. **Foster-parents.**—You may be interested to know that a blackbird laid three eggs in a swallow's nest in a cowshed near Kineton, Warwickshire. From these the swallows hatched two young blackbirds which they brought up to maturity. ERNEST PARKE.

17. **Curious Nesting Places.**—This year two pairs of wrens selected very curious nesting sites in this garden. One pair built in a butcher's-broom bush, about three feet from the ground, and close to a gate, which when open is only a few inches from the entrance to the nest. The hen bird was very tame, and I often watched her when sitting. Six or eight eggs were laid, two of which I took, getting them out with great difficulty. On May 25 four or five eggs were hatched, and the young birds flew on June 11. The second pair of wrens built on a beam in the stable, inhabited by two very noisy dogs. The first attempt they deserted after laying the foundation of dead leaves, and the nest was destroyed. On May 5 they commenced building again, but left the nest for over six weeks before they laid any eggs. During this time I examined it at least a dozen times, reaching it by means of a pair of steps. There are now seven eggs, and the bird sits perfectly calmly, though people go in and out all day. When the door is shut, the birds go in and out through a window which is left open for them.

BLANCHE A CONEY.

July, 1903.

18.—**Dates of the Arrivals of Summer Migrants at Pucklechurch, Gloucestershire:—**

	1902.	1903.
Swallow	April 6	April 20
Cuckoo	,, 17	,, 29
Willow warbler	,, 17	,, 19
House martin	,, 18	,, 28
Chiff chaff	,, 21	March 31
Blackcap	,, 22	May 9
Whitethroat	,, 23	,, 9
Swift	,, 29	,, 19
Turtle dove	,, 29	,, 19
Lesser whitethroat	,, 30	,, 9
Redstart	,, 30	,, 9
Wood warbler	May 4	,, 9
Spotted flycatcher	,, 17	,, 18

Note.—Unfinished nest of a redstart found on May 9, and only the female bird seen. BLANCHE A. CONEY.

The Poplars, Pucklechurch.
June 3, 1903.

19. **Pike and Water-fowl.**—In answer to A. S. Godfree's note *re* Pike and Geese, in June number of NATURE NOTES, last year we had a young wild duck, nearly full grown, killed by a pike having caught its head, the teeth mark being most distinct on the soft part of the lower mandible. Also, I was told by an old man some years ago of a swan and pike he had once seen, both dead, the pike having got hold of the swan's head and been unable to get free again.

20. I am assured by a gamekeeper that the following strange and fatal conflict took place at Castle Howard some years ago: "A swan put its head under water to reach the bottom of the pond when a gigantic pike swallowed his head, with the result that both pike and swan perished." ZENO.

The Vicarage, Barmby Moor, York.
July, 1903.

21. **Jack killed by Hail.**—Last week a friend of mine who lives at Groby Pool, near Leicester, told me that after one of those thunderstorms with abnormal hailstones which we had last summer, he counted thirty-five dead jack floating on the surface, many of them being badly bruised. The villagers found many more. W. A. S.

July 20, 1903.

22. Variation in Orchis maculata.—I enclose forty plants of *Orchis maculata* for your consideration which I found growing down the edge of a wood at Yardley Chase, Northampton. They were growing mixed, light and dark anyhow, not, as Mr. Ellis says of his, from light to dark. I should think there were some hundreds, but the enclosed is a very fair selection. I got no roots as I thought they would be better left to grow; I have some in the garden, and cultivation does not seem to alter them at all, as what were light come up every year just as light; but I will see if a richer soil does alter the colour at all. I do not think that has much to do with it, as sometimes the richest-coloured forms seem in a poor situation. I hope the observations of members may be discussed and printed in our journal at some future date. I add the following notes as I have grouped them, roughly perhaps;—

(*a*) Six specimens, height 8 to 20 in.; flowers white, faintly spotted; mid-lobe in some long; leaf-spots absent in some. (*b*) Ten specimens, height 9 to 15 in.; flowers slightly tinged with purple and markings darker; mid-lobe mostly longer; leaves spotted. (*c*) Fifteen specimens, height 12 to 18 in.; flowers more or less tinged with purple; markings distinct; mid-lobe variable. These seem nearest to sub-species *ericetorum*. (*d*) Nine specimens, height 10 to 15 in.; perhaps not dark enough; flowers purple; mid-lobe long; bracts and upper stem of some, purple. G. H. GOODE.

Kingsley Park P.O., Northampton.

23. Thunderstorms far North.—In reply to Mr. A. H. Duvall, Harriet Martineau must be incorrect in stating that thunder ceases at 66 degrees of latitude. Von Baer and other travellers thought that no latitude had been reached where the atmosphere is free from thunderstorms. He witnessed one in Nova Zembla beyond 73 degrees north. It even thunders as far north as Spitzbergen, at a higher latitude than 75 degrees. Thunder is said to have been heard amid the ice-bound polar regions, but such experiences appear to have been rare. Atmospheric disturbances apparently diminish from the equator to the poles, and this is the result of the strong solar influences and of the velocity of the earth's surface (due to rotation), near the equator. We should naturally expect to find a comparatively quiescent and settled state of things prevailing in the polar regions. AN OBSERVER OF NATURE.

NATURAL HISTORY QUERY.

2. Two Broken Eggs.—Last Saturday I found two yellow buntings' nests and a song thrush's nest, with the eggshells lying in them broken, but not crushed as they would be if young birds had been hatched and had sat upon them. The nests were in dense thickets not far above the ground, and in one only a small part of the egg was broken away, that part turned upwards. All the eggshells were quite empty. I should be much obliged if you could tell me the cause of the eggs being thus.

47, *Gloucester Square, Hyde Park.* H. SCOTT.
July 1, 1903.

SELBORNE SOCIETY NOTICES.

Council Meetings.—June 24.—Prof. G. S. Boulger, F.L.S., F.G.S., was elected delegate from the Society to the Council of the National Trust. He was also re-elected delegate to the Council of the Thames Preservation League. Mr. Geo. A. B. Dewar, B.A., was elected to fill the vacancy on the Council. The Committee granted a donation of £2 2s., and Prizes to the value of £3 3s., to the forthcoming Nature Study Exhibition to be held in London next autumn.

The usual monthly meeting of the Council will be held at 20, Hanover Square, W., on Wednesday, August 26, at 5.30 p.m.

New Members.—Herbert Roberts, Esq., Hampstead Heath; Rev. R. Ashington Bullen, B.A., F.L.S., Pyrford; J. A. Fallows, Esq., Edgbaston; — Crane, Esq., Easebourne; Mrs. Bullock, Midhurst; Mrs. Fulford, Midhurst; Mrs. Hill, Midhurst; Mrs. Clarence, Easebourne.

Donations and Subscriptions.—The Council beg to acknowledge the following Donation:—Mrs. Mayor, 15s.; Subscriptions over 5s: J. A. Fallows, Esq., 20s.; — Crane, Esq., 20s.; Mrs. Hill, 10s.

NEWS FROM THE BRANCHES.

Brighton.—On the invitation of the members of this Branch a meeting was held on July 11, at the St. Stephen's School Room, to consider the extension of the work of the Selborne Society in Brighton, and especially in the direction of promoting nature-study amongst children. Most of those present were strangers to the Society.

The chair was taken by Mr. J. L. Otter, Hon. Treasurer of the Society. The Chairman in an introductory speech referred to the loss of much of the natural beauty of the country by the enormous industrial expansion of the last fifty years. People rejoice in the "development of our resources," but the final issue under present economic arrangements is dark; and in the meantime a price must be paid, not only in the natural objects and natural scenes which are the source of our ideas of beauty and the source of the most purifying pleasures, but in the character of many of our fellow-countrymen. The packed life in towns leads to degeneracy, and a consequent blunting of sensibility. Sir W. Anson only two days before stated in the House of Commons that 60,000 school children in London are too inferior physically to get the benefit of the teaching in the schools. Smoke is another matter of national concern, or ought to be.

In the matter of protection the teaching of the Selborne Society is that the right place of our wild animals and plants is where Nature has placed them. There they show their beauty; there they show their meaning, and fulfil their purposes. Accessible collections are good and even necessary, but the Chairman thought that in the case of a very rare plant, if he who takes it for a useful collection does well, he who leaves it alone does better.

With respect to the education of children in nature-study, the object is an interfusion of feeling and intellect. There is a mode of feeling towards Nature which is unlike any other. It is probably common to most, though in greatly varying degree. It is the motive power of some of the finest scientific work. There must be this sense of an emotional relation to Nature in both teacher and pupil, otherwise not much could be expected.

An interesting discussion followed, speeches being made by the Rev. G. Moor, Vicar of Christ Church; Mr. Freemantle, Master of the Christ Church School, who made some valuable remarks on his practical experience; Miss Mayhew, Principal of the High School for Girls; Mr. A. Griffith, and Mr. Pankhurst.

A resolution approving of the work of the Society was carried.

Several of those present joined the Society, and there is reason to hope that this meeting may be the beginning of an active life of the Branch.

Hampstead (Northern Heights). Referring to the notice in the July number of NATURE NOTES of the scheme for raising £48,000 in order to buy some eighty acres of land for the purpose of enlarging Hampstead Heath, the Selborne Society is represented on the Extension Council by Messrs. J. E. Whiting, C. M. Hailes, and Geo. Avenell. The last named attended the initial meeting held at the offices of the Commons and Footpaths Preservation Society, Westminster, on June 26 last, when the necessary steps for launching the scheme were determined. A deputation representing different bodies has since waited on the Hampstead Borough Council, urging it to vote a grant towards the sum required. Mr. Edward Bond, M.P., acted as spokesman, and the Selborne Society was represented on the occasion by Mrs. G. S. Jealous, and Messrs. Jesse Argyle, C. M. Hailes, and Geo. Avenell.

FIELD CLUB RAMBLES.

June 27.—Stanmore and Elstree. Just forty Selbornians and friends took part in the ramble, which made, perhaps, a greater demand upon the ambulatory

powers than the Society's excursions generally do. After leaving Pinner Station (L. & N.W.R.) the route lay for a mile or so across meadows. A little way from the path, in a damp corner of an adjacent field, ramson (*Allium ursinum*) may be found flowering in due season; while, when the guide prospected the district a few weeks ago, Herb Paris (*Paris quadrifolia*) was shown to him by a local resident growing in a neighbouring coppice, access to which at the present time, owing to renewal of the fences, is, however, almost completely barred. The tree-edged road, rising steeply, was followed to Harrow Weald, whence there are retrospects remarkable alike for extent and charm. Skirting Stanmore Common, Elstree was soon reached, and here tea was served to the visitors in the open at the head of the lake. Then came possibly the most enjoyable part of the day, the walk to Stanmore by fieldpaths, nearly hidden in places by long grass. After the noise and dust of the high roads, the change was both marked and refreshing.

July 4.—About twenty members of the Field Club met at Epsom Station, and under the guidance of Miss Giberne proceeded to ramble by the side of the Common to Ashtead Woods, where wild flowers and grasses were growing in great abundance. The weather was all that could be desired, and the ramble was thoroughly enjoyed. Botanically speaking, this outing proved one of the most interesting of the season, very many varieties of the wild flowers being in bloom; one of the most conspicuous being the heath bedstraw, the pretty little white flowers of which formed a perfect carpet in many parts. Some of the rarer flowers were gathered, amongst which may be mentioned *Hypericum humifusum*, *Carduus pratensis*, *Trifolium filiforme*, *Lemna trisulca*, and *Apium inundatum*. The sweet-scented honeysuckle, ever a joy to lovers of Nature, was growing freely in the hedges while the dragon-flies and butterflies were seen to advantage and much admired; as also the many wild birds. A welcome tea was provided by Mrs. Fenton at Ashtead, to which ample justice was done. The party then separated, some returning to town by early train, whilst others enjoyed a further ramble amongst the trees in the woods.

July 11.—West Drayton and Iver. The party, under the leadership of Mr. Wilfred Mark Webb, F.L.S., of Hanwell, followed the same course as on the two previous years that the excursion has been made. Several members of the Ealing Microscopical Society availed themselves of the privilege of being present, and the Ealing Branch of the Selborne Society was, as is usually the case in all matters pertaining to the Association, well to the fore. In all, twenty-three were present. A start was made along the path to Thorneybroad Fishery, which follows the railway embankment. Unfortunately, the railway company had just had all the herbage cut and burned, so that on one side there was nothing seen but ashes and the empty shells of martyred snails. Under the arch that spans the Colne, or one of its tributaries, the party passed, pausing to notice the stalactites, which are forming on the old portions of the brickwork. Then the walk was continued, by permission, along the bank of the pretty stream to the ford or watersplash at Iver. Demoiselle dragon-flies were darting about in profusion, and in the canal, which was passed, numerous freshwater shells were fished up for examination by those members interested in that branch of natural history. Tea was taken at the old Swan Inn at Iver, and afterwards the party returned along the other bank of the stream, halting while, as in previous years, Mr. Webb gave a short address.

FORTHCOMING RAMBLES.

August, 8.—Coulsdon and Farthing Downs. Meet at Coulsdon Station. Train leaves Cannon Street at 2.16; Charing Cross 2.6 (change at East Croydon or Purley); cheap day tickets, 1s. 6d. Guide, Mr. Hunt.

August 15.—Pinner. Ramble through Eastcote to Ruislip, tea at Ruislip; back to Northwood by lake and common. Train, Baker Street (Metropolitan) 2.21, Swiss Cottage, 2.29. Take return tickets to Pinner. Guide, Mr. C. M. Hailes.

August 22.—Hanwell to Greenford. Meet at Hanwell Station 2.5. Trains from Paddington at 2.35, Ealing 2.51. Tea at Greenford. Guide, Mr. Wilfred Mark Webb.

August 29.—Ramble round Chislehurst. Meet at Bickley Station at 3.15. Train, Victoria 2.42, Holborn Viaduct 2.37, St. Paul's 2.39. Guide, Mr. A. B. Wilkinson.

September 5.—Chipstead and Banstead Downs. Tea at Banstead. Return from Cheam. Charing Cross 2.6, London Bridge 2.15, East Croydon 2.36, Purley 2.44. Conductor, Mr. Edward A. Martin, F.G.S.

ANSWERS TO CORRESPONDENTS.

Dr. T. Drapes.—Your onions are attacked by the Onion fly, *Anthomyia cepæum*. As the pupæ remain in the ground, onions should not be grown two years running on the same area; but the ground should be deeply trenched. Infected onions should be carefully dug up and destroyed.

One of the best means of preventing the flies from laying their eggs on the plants (which is the great thing to be aimed at) is to earth up the bulbs as high or a little higher than the neck; this has proved very successful in many instances. Strewing sand soaked in paraffin oil along the drills, or watering with the following mixture: 1 pint of common carbolic acid, mixed with 1 quart of soft soap, dissolved in 1 gallon of boiling water; stir until thoroughly mixed, and before using add thirty parts of water to one part of the mixture. As soon as any bulbs are seen to be attacked remove them, taking them up with plenty of soil, so as to be sure to take all the grubs too. They should be put into something from which the grubs cannot fall out, and burnt. Ground which has borne an infested crop should be dug up at once, and the surface soil turned well down, so as to bury any chrysalides that may be in it so deep that the flies will be unable to reach the surface when they emerge from the chrysalides. I should have mentioned that spraying with weak paraffin emulsion is effective in keeping away the flies. More than one application is necessary, particularly in showery weather.

S. U. Body.—The specimen of rose was certainly bad, and we cannot, as a rule, name florists' flowers. It is an old-fashioned garden form of the *Rosa gallica*, or French Rose, type, very near to the striped *Rosa mundi*. If you can get a better specimen we will submit it to a specialist.

Mrs. Needham—*Sedum Forsterianum*.

LETTER RECEIVED.

Mr. M. J. Teesdale.

NOTICES TO CORRESPONDENTS.

1. All communications for NATURE NOTES must be authenticated with name and address, not necessarily for publication.

2. The return of an unaccepted contribution can only be guaranteed when it is accompanied by a stamped and addressed envelope. We cannot undertake to name specimens privately, to return them, or to reply to questions by letter.

3. All communications for any number must be in the Editor's hands by the 10th of the preceding month.

4. Communications for NATURE NOTES, books for review, specimens for naming, &c., should be addressed to the Editor, PROFESSOR BOULGER, F.L.S., F.G.S., 11, Onslow Road, Richmond, S.W. But from July 25 to August 31, to care of Messrs. John Bale, Sons, and Danielsson.

5. For the supply of the Magazine to others than members, or for back numbers (except in the case of new members), address the publishers, with stamps at the rate of 2½d. per number, Messrs. JOHN BALE, SONS AND DANIELSSON, Ltd., 83-89, Great Titchfield Street, London, W.

6. Letters connected with the business of the Society, subscriptions, &c., should be addressed to the local Secretary, or the Secretary to the Society, Mr. R. MARSHMAN WATTSON, 20, Hanover Square, W.

Nature Notes:

The Selborne Society's Magazine.

No 165. SEPTEMBER, 1903. Vol. XIV.

OBJECTS OF THE SOCIETY.

To preserve from unnecessary destruction such wild birds, animals and plants as are harmless, beautiful, or rare. To discourage the wearing and use for ornament of birds and their plumage, except when the birds are killed for food or reared for their plumage. To protect places and objects of antiquarian interest or natural beauty from ill-treatment or destruction. To promote the study of natural history.

SELBORNIANA.

Nature-Study Exhibition.—It has now been decided that the Home Counties Nature-Study Exhibition is to be held, from October 30 to November 3, at the offices of the Civil Service Commission. Particulars can be obtained from the Secretary, Wilfred Mark Webb, Esq., F.L.S., 20, Hanover Square, W.

Wounded Grouse.—Before the opening of the shooting season, Colonel Coulson sent the following temperate appeal to sportsmen through the *Daily Mail* :—

"Sir,—In a few days the slaughter of grouse, &c., will recommence. May I put in a plea for the numbers that, owing to 'driving,' will be left, midst glorious scenery, to sob out their lives in pain and distress?

"Wounded birds there always have been and will be; but under the new conditions of shooting the number is, necessarily, much increased. It is a sad thought, this leaving for hours, if not for days, maimed and helpless atoms of sentient life.

"It seems the one blot, for life has to go, connected with a day on the moors. All the rest is so beautiful—the purple heather, the grand air and scenery, the clear-running rivulet, the hum of bees, the scent of wild flowers—what a charm there is in it all!

"I urge that still more thought be given to the luckless wounded, even if it means the curtailment of a 'drive,' or extra hands engaged to search quickly for those birds, borne by force of wing and wind to long distances in rear of the 'butts.' Some grouse misery might thus be saved, and a diminution, too, of remorse felt on the part of shooters for the havoc they have made among the most beautiful and shapely bird we retain in these islands."

OBITUARY.—The recent death, at the age of seventy-six, of Mr. William Joseph Richards, of Riversdale, Torquay, the Secretary, and to a great extent the founder, of the United Devon Association, is a great loss to the cause of the defence of the amenities of our country. Mr. Richards achieved the very difficult task of uniting a large body of men of most diverse characteristics by persuading them that they had interests in common. His simple but cogent argument has been more than once alluded to in NATURE NOTES. The railway companies, the innkeepers, and the tradesmen generally in Devonshire are interested in the influx of tourists and visitors. These strangers are attracted by the beauties of the county; and, therefore, Devonians generally are personally interested in the preservation of those beauties. If the lanes are to be stripped of their ferns, or if beauty-spots are to be otherwise disfigured, the goose that lays the golden eggs will have been killed. This lesson, which Mr. Richards brought home to his neighbours in the west, is one that requires to be driven home in many other parts of the country.

AN AUTUMN EVENING ON WIMBLEDON COMMON.

THE foliage is already beginning to assume its autumnal tints of russet gold and crimson. The silver birch is weighed down by a wealth of catkins, the hawthorn is heavy with reddening berries, and the chestnut, elm, sycamore, larch and lime, are in the "sere and yellow leaf." No longer are the gorse and broom a blaze of gold. The bramble bushes are laden with both ripe and unripe fruit, and would the "tripper" but leave the fruit to ripen, there would be a rich crop of luscious blackberries on the common this season. In parts, Putney Heath, the scene of many a deadly duel in bygone days, is carpeted with ankle-high purple heather and heath-bell, and possibly years ago this covert afforded harbourage to one of the most noble of our British game birds, the blackcock (*Tetrao tetrix*), a few stray specimens of which are, or were a few years ago, to be found in the neighbourhood of Aldershot and Bagshot Heath.

Resting upon a spray of heather is a blue butterfly which has evidently escaped from either an entomologist's net or

the bill of some insectivorous bird, for one of its hind wings is very badly torn. But notwithstanding its mutilated condition, the beautiful little creature flits away as though uninjured when I try to take it in my hand.

Leaving the heath at a point opposite the flagstaff, I enter the woods by a natural leafy bower, formed by the overhanging branches of the young oaks meeting overhead.

Alas, how silent are the glades and valleys which but a few short weeks ago were filled with the love songs of the nightingale, thrush, blackbird, cuckoo, wood wren, and a hundred different kinds of feathered choristers. And yet by careful observation amongst the trees and bushes the ornithologist might discover many of the birds whose singing so delighted his ears during the nesting season, for not only are the "home-stayers" here but some of the migrants also.

"Chink-chink, chink-chink-chink" reaches my ears from the topmost branches of a well-grown young oak. Looking upwards whence the harsh noise proceeds, I notice a stonechat hopping from twig to twig with marvellous agility. A short hunt in the underwood and I find a couple of pebbles, and then quietly seating myself behind a blackthorn bush, I knock the pebbles together in imitation of the bird's call, watching his every movement the while. For a time the stonechat remains quite silent, and stops hopping to listen, but suddenly taking up my challenge he chatters angrily, and a few minutes later flies into my thorn bush, and still chink-chinking, he dodges in and out of the bush evidently in search of his supposed rival. After a while he espies me, and doubtless the pebbles also, for I continue knocking them together, and then with a sadly ruffled hackle and an angry flit of the tail he flies away, and is soon lost to sight amongst the foliage of the woods. But as I sit smoking a pipe of contentment in the shade I can still hear him chink-chink-chinking at no very great distance from my resting place.

As I brush through a dense growth of waist-high feathery bracken, an animal springs from almost under my feet, and for a moment of time the shapely black-tipped ears of a hare appear above the waving top of the bracken as Mistress Lepus goes bounding through the beautiful fern covert. Next a jay flies out of a silver birch and goes shrieking through the woods like the feathered hooligan he is.

At length I arrive at the eastern boundary of the common, and seating myself on the stump of an old felled oak, I look down upon one of the most beautiful and peaceful panoramas of English rural scenery that one could find within many, many miles of London.

Yet I have not wandered farther afield than six miles from Whitehall stone. Almost at my feet lies the picturesque little

hamlet of Kingston Vale, with its old-time red brick and tiled Elizabethan farmhouses, and its neat white cottages and villas, nestling amongst their gardens and orchards. The grand old oaks and beeches of the Royal Park of Richmond form a dark and magnificent background to the lovely landscape.

Hundreds, nay thousands, of Londoners are quite ignorant of the fact that such beautiful sylvan scenery as may be found in the wild and less frequented parts of Wimbledon Common exists so near the smoky old city in which they toil and labour from year's end to year's end. But perhaps it is well so, for the wrecked condition of the hazel bushes, rowan trees and heather tell their own tale of the ravages wrought upon them by the "trippers" from the great Metropolis.

J. M. B. Durham.

A NOTE ON CARLYLE AND DARWIN.

THERE are two passages from the works of Carlyle and Darwin respectively which have not, as far as I am aware, ever been compared with each other, although it is likely that readers of both these authors' writings may have noticed them, just as I did some years ago. These two passages may therefore be of some little interest. To begin with Carlyle: "'In an opening of the woods'; for the country was still dark with wood in those days, and Scotland itself still rustled shaggy and leafy like a damp black American forest, with cleared spots and spaces here and there. Dryasdust advances several absurd hypotheses as to the insensible but almost total disappearance of these woods; the thick wreck of of which now lies as *peat*, sometimes with huge heart-of-oak timber-logs embedded in it, on many a height and hollow. The simplest reason doubtless is, that by increase of husbandry there was increase of cattle, increase of hunger for green food; and so more and more the new seedlings got yearly eaten out in April, and the old trees, having only a certain length of life in them, died gradually, no man heeding it, and disappeared into *peat*" ("Past and Present," Popular Edition, p. 85).

Now for Darwin: "Here we see how potent has been the effect of the introduction of a single tree, nothing whatever else having been done, with the exception of the land having been enclosed, so that cattle could not enter. But how important an element enclosure is I plainly saw near Farnham, in Surrey. Here there are extensive heaths, with a few clumps of old Scotch firs on the distant hill-tops; within the last ten years large spaces have been enclosed, and self-sown firs are now springing up in multitudes, so close together that all cannot live. When I ascertained that these young trees had not been sown

or planted, I was so much surprised at their numbers that I went to several points of view, whence I could examine hundreds of acres of the unenclosed heath, and literally I could not see a single Scotch fir, except the old planted clumps. But on looking closely between the stems of the heath, I found a multitude of seedlings and little trees which had been perpetually browsed down by the cattle. In one square yard, at a point some hundred yards distant from one of the old clumps, I counted thirty-two little trees, and one of them, with twenty-six rings of growth, had during many years tried to raise its head above the stems of the heath, and failed. No wonder that as soon as the land was enclosed it became thickly clothed with vigorously growing young firs. Yet the heath was so extremely barren and so extensive that no one would ever have imagined that cattle would have so closely and effectually searched it for food.

"Here we see that cattle absolutely determine the existence of the Scotch fir. . . ." ("Origin of Species," sixth edition, 1885, p. 56).

I need only add that "Past and Present" was published at the beginning of April, 1843 ("Carlyle's Life in London," by J. A. Froude, Silver Library Edition, 1897, vol. i., p. 306). "The Origin of Species" was published in November, 1859 ("Charles Darwin; His Life," &c., Cheap Edition, 1902, p. 41). In the autobiographical portion of the Life I have just quoted, Darwin mentions having met Carlyle several times during the period 1839-1842 (*Op. cit.*, p. 36). I do not for a moment wish to imply that Darwin was indebted in any way to Carlyle. On the other hand, it appears probable that Carlyle arrived at his conclusion quite independently, unless he got the idea from Lamarck's "Philosophie Zoologique," a work I am not sufficiently well acquainted with, however, to state positively if the point is touched upon therein. Carlyle was an omnivorous reader, and it is more than likely that he read that suggestive essay. Lamarck is casually referred to in connection with the death of Mirabeau in Carlyle's "French Revolution" (vol. ii., People's Edition, p. 119).

GEORGE PERNET, M.B.

OCEAN WAVES.

HOUGH among the movements of the waters of the ocean which we class under the name of waves are those due to tidal attraction and to earthquake disturbance, most of the waves we see are due to the immediate or more remote action of wind. A gentle breeze ripples the surface of any water, whilst higher waves are mainly dependent upon the greater strength of the wind, and the depth and breadth of the water. Fresh water being, however, lighter

than salt water, fresh water lakes have on the whole larger waves than bodies of sea water of proportionate size. On Lake Superior, for instance, we not only experience violent storms with lofty waves, but all the familiar permanent results of wind and wave action, beaches, sand-dunes and cliffs, are represented along the shores.

A gale in the open ocean will lash up the waters into spray and produce waves which seem of prodigious height to unfortunates in any small boat; but few of our impressions are more misleading. Dashed from their crests into the troughs between, we say the waves ran "mountains high;" but the highest waves in British seas probably never exceed fifteen or twenty feet, and the greatest height observed by Scoresby in the waves of the Atlantic was but forty-three feet. This is, of course, the height of the wave from trough to crest and has nothing to do with the height to which spray, water or stones may be hurled when the waves break on the shore.

The wave-movement produced in a storm is prolonged for some time after the wind has lulled, and to a great distance beyond the original area of disturbance, not as waves with broken crests of spray, but as the broad and long heaving undulations known as ground-swell. Here again appearances are deceitful, and it is difficult to convince oneself of the small transporting effect of these great waves in the open sea. As in ordinary waves in similarly deep water, the actual movement of the water is mainly up and down, its particles travelling in a curve resembling an attenuated figure of eight. This explains why, unless they get into some ocean-current, bottles thrown overboard, or other floating objects, travel so slowly across the surface of the ocean.

Where the water becomes shallower near shore, the upper part of the great heaving mass of water produced by ground-swell over-rides the lower, retarded as is the latter by the friction with the bottom, and the huge billow curves over and bursting into foam and spray, is known as a breaker. The same name, however, is applied to ordinary waves, produced by the immediate impact of to-day's wind, when they break upon sunken reefs. All waves in shallow water become what is termed "waves of tranlsation," and we then see them carry shingle along the sea-bed, and floating bodies on their surface rapidly towards the shore.

On a shingly shore, though the limits of the beach may be mainly determined by the tides, each wave may be seen contributing its share of work in the grinding-down of flints or other masses of hard rock into smaller and rounder pebbles and sorting them according to their size. The deafening rattle of the undertow, as the wave, retreating from the shelving shore, drags back with it these myriad pebbles, may give us some notion of the forces of friction and percussion thus exerted in breaking, chipping, rounding, and polishing.

THE LAST NIGHT AT MAGDALEN.

THE best friends must part, and every pleasure must have an end. These are the thoughts which strike home as we loiter in the well-kept quadrangle of the most lovely College in the world.

The still air is laden with the perfume of roses, the moths flit in and out of the flower-borders, the tall elms of the smallest deer park in England stand out against the afterglow as we listen to the fitful good-nights of the rooks.

It is our own good-night as undergraduates, and we are silent, as we drink in deeply the beauty of our well-loved tower and the fading outlines of Addison's Walk. Never again shall we run round past the red mays, in training for the boats or the cricket field; never again shall we gather the white fritillaries in the meadow, or take the dear old Bishop of Chichester, when staying with our popular President, to rejoice over the young kingfishers who have just left their annual nesting-place.

When the floods come down, the naturalists will not be there to see the stoats and weasels swimming to their refuge from the flooded meadows. Doubtless the reed-warblers will still build in the Don's Walk and the jackdaws pester the deer for contributions of hair to line their nests; but we shall not be there to see.

Ah, the good old days! Who could forget them if they would? Who would forget them if they could? B.A.'s, the successes of the field, the river, and the schools, these things are not in our thoughts to-night, but the men we have known and the place we have loved. Ah well, it is something to have lived and been at Magdalen! How proud we are still to give—if not our name—our College! It has given us the friends we only make once in a lifetime. It has made men of us and given us a never dying love for God's Nature in every form. And so we three chums with our arms linked in the good old way—the prosperous business man, the Indian Judge, and the country rector that are to be—pass on to join our comrades. A last *réunion* in the rooms above the rippling Cherwell, cross-linked hands for auld lang syne, and we doff our caps as Oxford undergraduates.

W. A. S.

THE SAP OF TREES.

THE Rev. F. M. Millard, of Otham Parsonage, Maidstone, sends us an article on this subject from a spring number of the *Evening Standard*, with some difficulties of his own. To make the matter clear, we must quote the article *in extenso*, only premising that whilst the difficulties of the subject are fairly stated in the first of its three paragraphs, the constructive part of the essay involves many confusions of terms, misstatements of facts, and consequent wholly erroneous conclusions. The article is as follows :—

This is the time of year when, according to a theory very generally accepted, though never very clearly explained, the sap of trees begins to rise. Rough winds shake the trees about, sunbeams warm their trunks, and heavy showers drench them with moisture. The moisture and the movement and the warmth all combine with the mysterious throbbing of spring life, and the sap begins to flow upwards until the autumn, when, gardeners are accustomed to say, it goes down, and then they may set about their transplanting and their pruning. On the face of it, the theory looks to be a very simple one, but when it comes to be examined it is not very easy to understand. "That some sort of circulation of fluids must take place in the body of a plant appears to be certain," says Professor Huxley, "but the details of the process are by no means clear." He proceeds to state the usual explanations of the phenomena of the upward movements of sap. Evaporation from the surfaces of the plant and leaves, he says, pulls up the fluid. The absorptive action of rootlets pushes up from below, while a certain portion of the sap is pumped up and exudes laterally from the side walls of the plant. Root-pressure, capillary attraction, "endosmose," "a kind of suction," "imbibition," "transpiration," these are some of the terms employed to explain the movement that sap is supposed to make from the extremities of the roots to the topmost twigs and leaves of a plant or tree. As Professor Huxley has said, however, the details of the process are by no means clear, and when we come closely to scrutinise the terms employed and the phenomena implied in them, the explanation they are intended to afford is not at all satisfactory. We have to account for the rising of a fluid, in the case of some trees, to a height of three or four hundred feet. It is suggested that this may be done by capillary attraction. But if we come practically to test the power of capillary attraction to raise a fluid even through such a substance as sponge or blotting-paper, we find that power limited to a few inches. Take, again, the assertion that sap is "pumped" up from the rootlets, or sucked up by evaporation. What can this pumping or sucking be? An atmospheric pump, we know, cannot possibly be made to suck up fluid to a height of more than thirty or thirty-two feet, while if we conceive it possible that the fibrous roots of a tree act as a force-pump to drive up the fluid, it is quite certain, having regard to well-known hydrostatic laws, that in order to drive the tiniest tube of sap three or four hundred feet, or even a hundred feet upwards, the force would have to be something very considerable. Many writers on the subject have recognised the inadequacy of any one of the suggested forces to perform the work of circulating sap in tall trees, but have supposed that it might be accounted for by the combination of all of them. But this will clearly not do, for the simple reason that the condition which would be necessary for the operation of one force would be fatal to another. A pumping process, for instance, would necessitate some sort of valve. As a matter of fact, there are no valves; but, if there were, capillary attraction requires a perfectly free passage. They [the forces] cannot all combine to raise a current of sap hundreds of feet into the air, and there is no one of the suggested forces that can do it alone.

The rather startling idea has been propounded that the notion of the rising of the sap in the spring and its going down in the autumn is all a delusion. It has been plausibly urged that there is no evidence whatever of any upward

movement of moisture in a tree, though there is unmistakable evidence of a movement downwards. One very striking fact in evidence may certainly be had by anybody who will take the trouble to bind a ligature so tightly round the stem of a young tree as to obstruct the flow of sap. If the movement of the fluid were upwards, from the roots, it would of course be natural to expect that the stem of the tree would swell out beneath the ligature. As a matter of fact, it will invariably bulge out above the obstruction. A few years ago the writer, who had no theory of his own on the subject, happened to twist a bit of wire round the stem of a young willow tree in his garden and left it there, and thought no more about it until a year or two afterwards, when his attention was drawn to the fact that the wire was embedded in the bark and the tree was being strangled. He set about to remove the girdle, and was much puzzled to observe this very phenomenon—the swelling of the trunk above the ligature instead of underneath it. How could that possibly be, with the sap flowing upwards? he asked himself; but he found the riddle quite insoluble, and gave it up. Not a great while afterwards he met with a small book describing a great number of experiments with growing trees and plants designed to show which way the sap actually did move. Bands of various kinds had been placed tightly round trees and shrubs and sticks of rhubarb, and so on, and with the invariable result that the writer had casually produced. The swelling was always on the upper side. Moreover, the author of the book, a Mr. A. P. Reeves, asserted that "three remarkable effects are produced in a tree by the removal of a ring of bark from the trunk. First, the sap will exude from the upper lip of the wound, and not from the lower. Second, the roots and that part of the tree below the ring will dry and die first. Third, the part above the ring will thrive for a few years and then die." Assuming this to be a fact, it is obvious that if the rootlets of a tree are the sources of its sap, and if the progress of this vital fluid is from the ground upwards, we have here a threefold riddle not at all easy to solve.

The theory propounded by the author was that, as a matter of fact, sap is not produced by the roots of a plant, and it does not move upwards. It is elaborated by the foliage from the atmosphere and the rain and the dew, and instead of being sucked up or pumped up in some way unknown to science, it percolates downwards by the simple action of gravitation. All the moisture requisite for the composition of a tree enters by the leaves, "and by the common law of gravitation travels slowly downwards between the bark and the alburnum, where all the pure nutrient sap is found." In the warmth of summer, according to this theory, this nutrient sap is fluid, and nourishes and expands the tree as it percolates downwards, while in the autumn the sap is merely congealed, and does not fall at all. It remains hard and adhesive between the bark and the alburnum. The function of the roots, it is explained, is not to elaborate sap, but to absorb the gaseous products of decomposing matter, and moisture about the roots of a plant merely accelerates decomposition and fits the rootlets for the absorption of the gases which result from it, and which ascend through the vertical cells just as naturally as the aqueous fluid comes down. Whatever may he the truth of the theory, it certainly disposes of all the difficulties indicated by Professor Huxley, and it most satisfactorily explains the otherwise inexplicable effect of a tight ligature round a growing plant. The truth of a scientific hypothesis is shown by its explaining all the phenomena, and this unquestionably does explain some of them. It is much easier to understand how a tree may absorb the gases of decomposition at its roots and pass them upwards than it is to conceive of their being imbibed overhead and passed downwards, and it is similarly much easier to conceive of aqueous fluid being produced in the leaves above and transmitted downwards to the roots than it is to imagine the reverse. It is, at all events, a very interesting and a very seasonable subject for a little speculation and experiment for those who are that way inclined, and it is by no means wanting in practical importance either. For upon the supposed movements of the sap in trees and plants a good many important gardening operations are based, and any alteration of theory would necessarily involve corresponding alterations in practice.

Mr. Millard's comment is as follows :—

"I have had in my house for, I think, twenty years a plant of ivy trained on a sort of wire trellis over the fireplace. It

grows in a flower pot of common earthenware, standing in a saucer. I constantly pour water into the saucer, supposing that it soaks through the flower pot, and so nourishes the roots of the ivy. It is quite certain that the air in which this ivy lives and thrives is much drier than the outer air; which seems to make it improbable that the leaves absorb and 'elaborate sap from the atmosphere,' as suggested in this cutting. I am further perplexed by Mr. A. P. Reeves's statement as to the effect of 'ringing' a tree. I constantly pass some holly trees which were ruined years ago by horses gnawing the bark. The tops of the trees are dead, but there is a fairly strong growth below the ring. Then, when trees are topped or pollarded, or (as with Spanish chestnuts in hop-growing districts) cut off level, or nearly so, with the ground, why, on Mr. Reeves's theory, do we find that the roots and the lower part of the tree do not die, but that a vigorous outgrowth follows? Surely Mr. Reeves's words, as quoted, are too sweeping."

The subject has been complicated by guesses based upon the misleading analogy of animal circulation. Plants have neither a heart, or central pumping station, nor anything exactly comparable to arterial and venous blood, or the pulmonary purification of the latter by oxygen; nor is there any true circulation of any fluid. Under the term "sap" two differing fluids are confused. Plants undoubtedly, as a rule—excluding, for instance, submerged species—depend for water and its dissolved nitrogen-, and other, salts upon their roots. This "unelaborated sap" undoubtedly rises, receiving—as was long ago shown by the experiment of a vine cut down to the ground in spring—a powerful initial upward impetus from "root-pressure" alone. It is equally certain that this unelaborated sap ascends through the vascular tissue of the sap-wood, and that its ascent is, therefore, in no way affected by any "ringing" of the bark which does not interrupt the continuity of this wood. It is equally certain from copious observation and experiment that the plant is dependent for the carbon of its food upon the air; that this is taken in by the leaves and other green parts, and is chemically combined, to form carbo-hydrates, and probably proteids also, with the ingredients of the "unelaborated sap," in the leaves and growing parts of the shoot; and that the resultant "elaborated sap" travels upwards or downwards wherever it is required. This "elaborated sap" may pass upwards to a growing point or a seed in process of development, or it may pass downward to the cambium or growing layer of the stem. To reach these destinations it travels generally by way of the sieve-tubes in the bast or inner bark, so that its downward course will be interrupted by ringing, though it may travel in part by the laticiferous system, and this is sometimes partly in the pith, and therefore

protected from such interruption. Ringing or tight ligatures round the base of a stem, *i.e.*, below its lowest branches or leaves, will, therefore, stop growth below them, though they will not kill a tree. We have known a wire loop gradually saw right through a stem which healed up as it passed, so that the tree continued standing and alive. On the other hand, the elaborated sap checked in its passage down the bast produces the swelling usually seen above a ringing or ligature.

The mechanism by which the unelaborated sap rises to the summit of lofty trees still presents problems not solved to the satisfaction of physiologists. Transpiration from the leaf-surfaces, no doubt, does much ; the rarefaction of the air-bubbles in the wood vessels by the removal of their oxygen may also contribute a "negative pressure" ; and we have to remember that transpiration is a vital process, that the wood vessels are filled with a column of water interrupted by air-bubbles, a "*chapelet de Jamin*," as it is termed, and that, though consisting of capillary tubes, they have thickened walls and thinner regions of permeable membrane or "pits." Though, therefore, as Strasburger has shown, the sap can traverse a zone of dead wood, this does not prove its ascent, initiated below by root-pressure and drawn upwards by transpiration, to be a non-vital process. The difficulties may not be all solved ; but there is no reason to complicate matters by loose phraseology.

SPIRAL TORSION IN PLANT-GROWTH.

A VERY interesting essay on "Spirals in Nature and in Art" has been recently published by Mr. Theodore Cook. The author's main purpose is to show that a certain beautiful spiral staircase is the work of Leonardo da Vinci, and was suggested to the Master by the shell of a species of *Voluta*, Leonardo's careful study of shells being well known to all students of his writings. Unfortunately, Mr. Cook has to admit that he is not himself a naturalist, while his subject is one which for anything like a complete exposition requires a considerable knowledge of molluscan development, and of the mathematics of curves. He has in consequence only touched the fringe of his subject on its natural history side. Our attention has been redirected to the question by some photographs, by Mrs. J. J. H. Teall, of a Cedar growing in the garden of Walter Harvey, Esq., at Dulwich, which have been sent us by M. J. Teesdale, Esq., and of which we here give a reproduction.

There are cases of normal spiral form in the Vegetable Kingdom, such as the alga *Ruellia*, or the inflorescence of the Ladies-tresses Orchid (*Spiranthes*) ; but perhaps cases of spiral

movement and abnormal spiral torsion are more relevant to this present case. Darwin showed that, while "dorsi-ventral" horizontal structures, such as ordinary foliage-leaves, may "nutate," or change their direction of growth, once or twice "simply," growing faster below and then faster above, and while vertical leaves, such as those of the Reed-mace (*Typha*), may nutate repeatedly but simply, elongating from side to side in an upward zig-zag movement, stems, tendrils, and other structures, which are cylindric or round in section, commonly "circum-nutate." Elongating, that is to say, as it were, in a succession of jerks at each successive point in their circumference, their apex describes an upward spiral, the sweep of

Spiral Torsion in Cedar at Dulwich.
(From Photograph by Mrs. J. J. H. Teall.)

which depends upon their flexibility. The intervention of an obstacle within the sweep of this circumnutation brings about the spiral twining of numerous climbing-plants, which twining is frequently accompanied by torsion, or twisting of the stem about its own axis. When that remarkable fusion of several stems together into a broad ribbon-like structure, which we call "fasciation," occurs, as it often does in the stems of Teazles or in the branches of the Holly, it appears as if the checked circumnutation produced the spiral torsion, which is the frequent concomitant of fasciation. Some years ago, teazle-

stems so fasciated and twisted were fashionable for a season as parasol-handles.

In the various attempts to explain the ascent of the sap in trees, we reached a few years back a "spiral-staircase theory," which seemed specious and for a short time held its own. Tracheids, or wood-cells, it was found, had transverse partitions at the same height along a radius of the stem, but slightly higher or lower than those of radial rows of tracheids on either side of them. Between these rows of tracheids were the protoplasm-filled cells of the pith-rays, and the theory supposed these cells by a vital process to take up the liquid contents of one row of tracheids, parting with them to another row at a higher level. There are, alas, several insuperable objections to this ingenious supposition, which might have helped us to understand a spiral twist in a woody stem such as that here illustrated.

The spiral splitting of the bark in the Spanish Chestnut is well known; but the external appearance of this Dulwich Cedar suggests a torsion far deeper-seated, and recalls some abnormalities of other trees, such as Elms, which are perpetuated by grafting, and which generally bear some such appropriate varietal name as *tortuosa*. It is hardly necessary to allude here to the externally induced spiral contortion in Hazel or other woody stems round which Honeysuckle or other tough stems have entwined themselves.

NATURAL HISTORY NOTES.

24. Is Nature Cruel?—Many are distressed by the way in which a cat "plays" with a mouse before killing it. That the mouse does not suffer so much as might be expected is proved by certain facts told me by a friend a short time ago. Her cat after catching a mouse and "playing" with it for some time, left it to go and eat some meat in a plate on the floor. To my friend's surprise, the mouse followed, in spite of a broken leg, and fed for a while out of the same dish, the cat occasionally pushing the mouse aside when it came too close. When both had finished the cat eat up its companion, who evidently feared death as little as the condemned murderers who, we are often told, "ate a hearty breakfast on the morning of their execution."

Christhurst, Sutton, Surrey. W. G. KILPACK.

25.—I never read opinions like those put forward by Mr. Smallman (p. 152) without a feeling of pain. If the powers of sensation in the lower animals are as feeble, or non-existent, as he supposes, it is not worth taking the trouble to reprove a boy who pulls the wings off flies, or puts a pin in every butterfly he catches, and lets it die a lingering death.

My article did not state that the lower forms of life are as highly sensitive as man. That they are more sensitive than Mr. Smallman thinks I trust most true lovers of Nature will readily allow. He says it "would not be very surprising if the invertebrata did not have the power of feeling developed," and questions "*if they do at all" feel pain!!* and tells us as a reason that "mutilated insects have been kept alive for several hours or even days, they all the time feeding well." I have known numbers of human beings who also have been "mutilated," having lost their eyes, noses, arms, or legs, &c., and who have lived for years, and fed uncommonly well. Indeed, had they not been good feeders many would not have survived their mutilations. Are we to conclude that people do not feel losing a limb because they are able to feed well?

A worm, which is low in the scale of creation, is not generally supposed to be a highly sensitive animal; and yet when in great pain will expose itself to almost certain death in its endeavours to escape. I once noticed a large earthworm hurriedly leave its hole and throw itself with every sign of agony on the open pathway, where it was liable to be picked up by the first bird that came along. It had been attacked underground by a rove beetle. The worm seemed to prefer the risk of instant death to the pain caused by the beetle's powerful jaws, which it dragged along with it in its struggles.

Many creatures supposed to have some of their "senses missing" are not so insensitive as people often think. Worms have neither eyes nor ears, and yet are sensitive to light and music (*vide* Darwin's "Earthworms"). A bluebottle, in spite of not having a nose, finds out a piece of bad meat easily enough. In short, many of the lower animals contrive to see, hear, taste, or smell sufficiently for their purpose, and often in a high degree, without our being able to point to any special organs of these senses in their bodies: and to suppose they are devoid of a sense because we are unable to discover it is frequently to confess our own ignorance.

I have read Livingstone's account of his sensations when in the clutches of a lion, quoted by Mr. Smallman. Livingstone seems to have been stunned or deadened for a time; but how long did that feeling last? He was soon rescued. Are we to suppose from this that a mouse continues to feel stunned all the time a cat plays with it—a performance that sometimes lasts two or three hours?

I once read an account of two natives in India being sprung upon by a tigress, one of whom escaped to a tree and was a witness of his comrade's fate. The tigress dragged the man into the open, and placing herself between him and all possible retreat, called from the jungle her two cubs, which she incited to attack her victim, and taught how to act. Several times did he, crawling on all fours, with the cubs tearing at his flesh, attempt to approach the tree in which his fellow had taken refuge, and to whom he vainly cried for help. Whenever he neared the tree the tigress dragged him back. After a time his struggles and entreaties ceased and he was devoured. This poor native's behaviour goes to show that the sensation of being deadened to all pain and fear, such as Livingstone experienced, soon passes off; that the instinct of self-preservation, so necessary in all creatures to prevent extinction, reasserts itself, and the victim then realises the horror and agonies of the situation.

If we once get into our heads the notion that vast numbers of the lower creatures are almost, if not entirely, insensitive to pain, we shall not know where to draw the line. We shall be in great danger of becoming callous to their sufferings, and their claims of mercy at the hands of man.

Market Weston, Thetford. EDMUND THOS. DAUBENY.
July, 1903.

26. Animals (p. 175).—A lady speaks of "insect, bird, or animal." Will she kindly permit me to say that four-footed beasts are animals, that birds are animals, and that insects are animals.

EDMUND THOS. DAUBENY.

27. White Stoats.—The gamekeeper's statement (p. 95) that white coats in winter are found on female stoats only is confirmed by "Lord Lilford on Birds," p. 31, where it is said that the "white and pied stoats are exceptionally rare here; but four out of some nine of these little beasts, brought to me during the last few weeks, have been more or less white, one very nearly quite white. All these varieties were of the gentler sex." It is probable that the coats of the females are affected by less cold than those of the males, and that only in very cold climates both sexes become ermines.

August, 1903. EDMUND THOS. DAUBENY.

28. Birds of Prey (p. 175).—Jays sometimes visit my premises in search for young birds. I have seen a jay pursue a fledgling on the wing, drive it to the ground, and devour it. This is a common habit with British crows. Attempts to convict cuckoos of being "cannibals" have hitherto failed. They are very useful birds, feeding on insects, and especially on hairy caterpillars. There has been no lack of insect food in these parts this year, but rather the reverse.

August, 1903. EDMUND THOS. DAUBENY.

29. Blue Tit.—A pair of these birds have reared their brood in an old martin's nest, and when nearly full-fledged the young fell to the ground. They were then placed in a box, where the parents attended to them until able to look after themselves. It is an uncommon occurrence for these birds to take to the nest of the house martin.

August, 1903. EDMUND THOS. DAUBENY.

30. Dropped Eggs.—While walking over some sandy burrows at the seaside, a friend of mine picked up two burrow ducks' eggs, generally known as Shield ducks. As is well known, the burrow duck lays her eggs some few feet down the rabbits' holes; and the only reason I can assign for the eggs being where they were—some distance from any holes of any kind—is that the old birds, knowing the eggs to be addled, as we afterwards found out, much to our cost, placed them there themselves, by some means or other.

14, *Cross Street, Barnstaple.* B. F. CUMMINGS.
August 8, 1903.

P.S.—They may have been dropped there in just the same way as the starling's eggs were, mentioned by W. Stapleden.

31. Inclement June and the Swifts.—The arrival of the swifts was later this year, and the sudden changes of temperature caused them much discomfort, and doubtless many perished. In this town for two or three nights several of them took shelter in a house, which they selected as being the highest in the row. The bedroom windows being left open till dusk, they flew in and remained the night. The swift's feet are not suitable for perching, all the four toes being in front, so they remained on the carpet near the window. One difficulty they had to encounter when wanting to go out again, they slipped between the sashes and had to be released—a curious experience for the restless swift. There is an interesting note in "White's Natural History of Selborne," by Rev. W. H. Herbert, in which he mentions having kept a young disabled swift for nearly a fortnight. It was not caged, but kept in an impromptu pen made of folio books and newspaper, and sometimes had its liberty in the room. It made a chirping noise all night, something like the singing of a kettle, or chirping of a cricket. It was eventually released and was able to join its companions; but it lingered about the neighbourhood for some time. The birds I have mentioned uttered no sound, except that of distress when being extricated from the window.

Teignmouth, Devon. CAROLINE E. FARLEY.

NATURAL HISTORY QUERIES.

3. Featherless Canaries.—A friend of mine who breeds canaries has two young birds, now about six weeks old, whose bodies are entirely destitute of feathers or down of any kind, with the exception of the quills on wings and tails. The skin is perfectly smooth, with no sign whatever of feathers to come. I should be interested in hearing whether any readers of NATURE NOTES have ever met with a similar defect among their birds, or can offer any explanation.

Northgate House, Winchester. U. M. LANGDON.
August 9, 1903.

4. White Cockroach.—Can any of your readers explain this phenomenon? A white cockroach was found in our kitchen a short time since, and I was assured it was wholly white, but I did not see it, as it went the way of these all too numerous, but doubtless useful, scavengers, the cook's foot being handy at the time.

Teignmouth, Devon. CAROLINE E. FARLEY.

5. Beeches.—A number of beech trees have died in these parts, for which no reason is given beyond that of being killed by the drought. Two years ago twenty or thirty in one row died, and close by a similar number. They grew in a light sandy soil, and apparently succumbed to the succession of dry seasons we experienced up to two or three years ago. They were not the victims of old age. Can any other reason be given?

August, 1903. EDMUND THOS. DAUBENY.

6. Puff-ball, or Devil's Snuffbox.—Owing to the wet season the above are very large (for this locality) this season. I picked one yesterday 25 inches in circumference.

I should like to know if they are poisonous. In their early stage they smell very like mushrooms. The powder is used to stop bleeding in these parts. What are its medical properties? I see from "Brewer" that puff-ball is a corruption of pouk or poukball, anciently called puckfist. The Irish name pookafoot (Saxon, polkerfist or toadstool). Shakespeare alludes to this superstition when Prospero summons amongst his elves—

"You whose pastime
Is to make midnight mushrooms."
—"The Tempest," v., i.

ZENO.

[Far from being poisonous, the large puff-ball (*Lycoperdon giganteum*), when fresh, is delicious eating. Personally, we prefer it cut thin and fried crisp; but a little batter may be added. It should be pure white inside resembling white kid; but will keep fresh for several days. As a styptic it is used when old, *i.e.*, ripe, in which condition it is also used as tinder, or for suffocating or stupefying bees. Its styptic action is, probably, purely mechanical.—ED. *N. N.*]

SELBORNE SOCIETY NOTICES.

New Members.—Gilbert Jennings, Esq., B.A. and Mrs. Jennings, Chertsey; Rev. W. A. Shaw, M.A., Haselbeech Rectory; Miss M. E. Maginniss, Daleham Gardens; Mrs. Mary H. Crafer, Brighton; Mrs. Norris, Brighton; Geo. Morgan, Esq., Brighton; H. J. Matthews, Esq., Hove; Mrs. A. F. Griffith, Brighton; Rev. Gerald Moor, Brighton; E. A. Pankhurst, Esq., Brighton; H. S. Toms, Esq., Brighton.

Donations and Subscriptions.—The Council beg to acknowledge the following Subscriptions over 5s.: Rev. W. A. Shaw, M.A., 10s.; Capt. Jas. Cundy, £2 2s.; Rev. R. Ashington Bullen, £5 (Life membership).

FIELD CLUB RAMBLES.

July 18.—While a storm of thunder and lightning was being experienced in London, some ten Selbornians met on Chertsey Station amid a downpour of rain. For some time it seemed as if they would get no further, for the rain was so heavy and continuous that no attempt was made to leave the station. Soon after 4 p.m., however, the sky began to lighten and the party started for Mr. Jennings' house. A very kind reception and welcome cups of tea awaited the party, and after this Mr. Jennings kindly led the way, as the guide, Dr. Willson, had been unexpectedly detained. After inspecting several houses, probably erected from the materials of the old abbey, the path was taken to the Ferry. The conditions of the path and vegetation precluded any botanical ramble, and only the ordinary flowers of the hedgerows were noticed.

The party then crossed the Ferry to Laleham. A fine clump of the greater celandine was observed nearly opposite the church. Here the vicar, Mr. Stodart, was kind enough to point out several features of architectural interest in the edifice, the fine Norman arches being specially admired. The old parish registers written on parchment dating back to Henry VIII.'s time were inspected, and then Mr. Stodart led the way to the churchyard and pointed out the tomb of Matthew Arnold. In all, five generations of the Arnold family are represented, and the vicar had some interesting anecdotes to relate in connection with them. A couple of fine old yew trees were much admired, and several headstones of the seventeenth and eighteenth centuries were also examined.

Returning the same way to Chertsey, the party was taken by Mr. Jennings to inspect the fragments of the Chapter House, the only remains of a once stately building. Going back to his house, he showed fragments of tiles glazed and unglazed, and pieces of marble pillars and the head of an aumbry and other pieces of the old building. Mr. Jennings then read the following memorandum on Chertsey Abbey:—

"One is reminded of Ozymandias' 'King of Kings' when one looks at what Chertsey Abbey is, and what Chertsey Abbey was. From the year 666 to 1536 it would be difficult to find in the whole of the south of England a more lordly, or rather princely, establishment than Chertsey Abbey, and

now we can see nothing more *in situ* than one garden arch above ground and the foundations of a little Chapter House, with some fragments of stone and a few bits of tile to stand for the artistic work of the gigantic building that previously occupied this ground and covered four acres. The trouble is not so much that the material building has passed away as that no record is left on the minds and hearts of men. Of the huge number of parchment and vellum rolls, missals, deeds and legal documents that must have been executed on this spot not one is known to remain. There is no biography as of Abbot Sampson of Bury St. Edmunds, to inspire a nineteenth century sage with his personality and his wonderful works. There is no great Gundulph of Rochester, or Hugh of Lincoln, or Poor of Salisbury, to astonish subsequent ages with his architectural triumphs. There is no ecclesiastic statesman such as Langton, Anselm, or Lanfranc, Becket or Wolsey, to leave his mark on the pages of history. The mitred Abbots of Chertsey were great men in their own time but they have hardly left even their names behind. Such 'footprints in the sands of time' as they ever impressed have been washed away by the advancing tide, and again reverting to Ozymandias—we may almost say, speaking figuratively—'nothing beside remains; round the decay of this colossal wreck, boundless and bare, but lone and level meads stretched far away.'

"The first Abbey was built in the seventh century. A Christian King of Mercia had owned this particular piece of land. His name was Penda and he appears to have shared the religious zeal of his father-in-law, Oswald of Northumbria, and his successor Wulpher had a Viceroy, Frithwold, who built the Abbey in 666, which must have occupied a kind of border position between the two great kingdoms of Wessex and Kent, and afforded a very suitable place for a church to secure a strong holding. Of the building of that period, doubtless of wood, nothing remains. It was either this Abbey or its successor that was burned by the Danes about 880, and these wild men and pagan men had the run of the Thames Valley, until Alfred made head against them and finally chased them to their ships after many a battle. It seems strange to think that this very piece of ground was unmistakably ravaged by the piratic Northmen 1,100 years ago.

"The first stone building dates from 1100, and a few fragments of this Norman work I shall be able to show you. It was successively restored by the early English architects, and beautified by shafts of Purbeck inset into the clustered columns. Many of these shafts I can show you both in the original polished state and in a burnt condition, and the plinths and capitals appear to have withstood the ravages of time better than the softer stone. Of the appearance of the Abbey, or at any rate of its church, we have unfortunately no accurate view in Dugdale's Monasticon, or any other of the medieval treatises on the ecclesiastical buildings of the period, and the only representation that survives is the very rough and archaic drawing from the Abbey seal, of which I am able to show you copies. It would appear that the church, 275 feet long, in size like a cathedral, had an apse and apsidal ends to the transepts. It was gothic, with nave and chancel, triforium and clear-storey. There was a tower and a spire upon it, and if the proportions of the seal can be relied upon the height must have been not much less than 200 feet. How completely the very church has vanished appears from a curious discrepancy between Mr. Pocock's work in 1855 and Mr. Angel's in 1861. I submit the plans and drawings of both these gentlemen, and you will see that Mr. Pocock makes the nave of the church to cross our garden at about 30 feet from the house, while Mr. Angel fits it in to the Chapter House that you have seen, and brings it down on the opposite side of the drive, where he claims to have traced a number of foundations. Now Mr. Angel was an architect of eminence, whose work in the City of London is well known, and I prefer to follow his lead, glad as I should be to have the bases of the great Abbey piers actually under the soil of our own garden. The question will no doubt be asked, how could it possibly happen that this huge building became so completely dismantled and torn to pieces as to leave no trace? The answer appears to be this: When the Abbey was confiscated, the lands, which were considered valuable, were given to some courtier or other, but the actual fabric of the buildings was No-man's land for one hundred years, and the inhabitants of Chertsey at the time were shrewd enough to take away that which no one claimed, and use it for their own advantage. All through the town of

Chertsey you will find the squared and sometimes tooled stones of the old church and the other Abbey buildings. Near this spot you could find more than elsewhere. The walls are made of them, the stables are built of them, my house is entirely constructed of Abbey stones, and should my political opponents consider my conduct deserving the treatment meted out by the Gordon Rioters one hundred and twenty years ago to those who differed from them and pull the house down, antiquaries had better come down at once for they will find great treasures in the walls of the very house that is before your eyes. Some of the most beautiful of the fragments on those shelves were taken out of the walls when the house was added to in 1898. Nay, the stones were not only used above ground, but Chertsey is swampy in places and it is necessary to make firm causeways for roads, and we are told, and I verily believe it, that the High Street of Chertsey has been made up to the height it now occupies and where it is rarely touched by floods, out of the stones of the old Abbey. Excavations made in any of the surrounding land are almost sure to bring treasures to light. When the Woking Water Works laid their mains along Colonel's Lane, a great many tiles, carved stones, and even one gold ring were brought to light by the workmen, and a small drain laid from the stable yard yielded more of these tiles and fragments.

"The history of the Abbey is practically a meagre chain of formal documents and a record of the works of one or two of the distinguished abbots. We begin with the Deed Gift by Frithwold, dated 666. We have the cartulary enrolled in the public Record Office, a MS. record in the British Museum, and we have a few more bills and accounts, and that is all. The work of the greatest abbot that ruled there, Rutherwyk, 1307-1344, survives in the form of fish-ponds or stews of which seven or eight remain, but only three are still devoted to the old uses. These, however, are full of fish, and have their inlet and outlet sluices. The alders that originally surrounded them have given place to hazels and daffodils, but they are to be seen in the garden of Mr. Boyce close by. Rutherwyk was a man of talent and apparently a shrewd man of business, who greatly increased the Abbey property. It is recorded that Edward III. and his court visited the Abbey in 1341. It was soon after his time that the legend, recorded first by Albert Smith, of how a maiden, Blanch Heriot, stopped the ringing of the curfew, occurred in the Wars of the Roses, when her lover was sentenced to die at curfew. The curfew still rings at Chertsey as it has rung for one thousand years, from Michaelmas to Lady Day. The news came and the girl hid herself in the belfry, and by various clever devices secured that the bell should not ring, knowing that a pardon was on its way, and the life of her lover was spared. The legend, which is a genuine Chertsey record, has been made into a well-known American poem, but this book gives it in its original form. Albert Smith was a native of Chertsey. On the suppression of the monasteries in 1536, Chertsey was at first leniently dealt with, and although the abbots and monks were dispossessed, they were allowed to retire to Bisham near Marlow, further up the river, but for some reason or another this arrangement was altered and they were removed and scattered and the place became derelict, as I have described. It remained until 1672, when Dr. Hammond obtained possession of the site and built a house which was one of the principal houses in Chertsey until the year 1810, when it too disappeared. The most distinguished tenant was Sir Nicholas Carew, Master of the Buckhounds to Charles II. Of this house there is shown a picture and plan. It came into the hands of Mr. Robert Hinde, the great London brewer of the eighteenth century, and of his lands I also show a plan. The house had probably by the beginning of the nineteenth century lived its life, for first the outbuildings and then the house itself were pulled down and the whole place reverted to dairy farm. A few cottages appear to have been put up and the last trace of these was pulled down this year in rebuilding the kitchen and adding a room. In the year 1852 Mr. Grunbridge built the house before you, at least the original, which has been added to since, and subsequently built the house beyond.

"It is somewhat a matter of regret to an inhabitant of Chertsey that your learned Society can carry away so little of the history of the most distinguished building that Chertsey ever had. The reference to Chertsey in Shakespeare is well known. King Henry VI. was buried here in 1471. Removed from the Tower to Blackfriars, the body, according to Stow, barefaced and coffinless, was put on a boat after his death and rowed thence to Chertsey in 1471, and subse-

quently removed to Windsor. It is possible that in the outlying churches such as Laleham, Egham, Chobham and Thorpe, which all belong to Chertsey Abbey, some records may yet be found, but at present we have something like a lost page of history in the nine hundred years that the Abbey stood on this site. Children were born around it, baptised in its church, became its monks or its labourers, or its scriveners or its tenants; lived their lives, married, died and were buried under its floors or in its churchyard, but no more record remains of the great building and the princes, for they were princes, who ruled over it, than of the life of the homeless labourer who drew his few groats a week from the revenues of the Abbey."

A hearty vote of thanks to Mr. and Mrs. Jennings for their kindness and hospitality concluded the proceedings.

July 25.—A city with such interesting monuments of the past as St. Albans possesses, was sure to attract a large number of Selbornians, and a party of twenty-five assembled under the guidance of Mr. W. Percival Westell. The first point of interest was St. Peter's Church, where the guide read a short account of its history. The next halt was made at the site of the battlefield, where two battles, the first in 1455, and the second some six years later, were fought. A peaceful spot it looks now in the shade of trees, covered with low bushes and green sward, with quaint, irregularly-built houses on either side. Then the party went on by the market-stalls, with reminiscences of Charles Dickens, through French Row, stopping to admire the old clock-tower dating from the fifteenth century. The cathedral was accorded a prolonged visit. After viewing the exterior, with its massive Norman tower in the centre, the Lady chapel, and the nave, in length only second to Winchester in the United Kingdom, the Selbornians passed inside. The high altar, with the coloured representation still unfinished of St. Peter and the fishes, some fine brasses on the floor, the chantrey of Abbot Ramrygge, adorned with carved rams, their collars showing the letters r.y.g., the old oak watching-gallery, sharing with that of Christchurch, Oxford, the distinction of being the only two existing in England, the Lady chapel, the chantrey of Humphrey, Duke of Gloucester, and the shrine of St. Alban, on the site, it is said, of his martyrdom, some sixteen hundred years ago, were visited in turn. From the time of Saxon Offa downwards, this shrine seems to have been the centre of veneration for kings and subjects. Soon after the Conquest the great Norman walls began to close in the holy shrine. Henry I., in 1115, witnessed the dedication of the Abbey Church, and among other noble names associated with its history are those of Cardinal Wolsey, Duke Humphrey, Sir John Mandeville and Matthew Paris. Valuable jewels adorned the shrine and the fairest work of the period was expended on it. Now it is pillarless, of bare and defaced aspect, fragments of coloured tiles, carefully joined together, conveying only the faintest notion of what its beauty once was. From Henry VIII.'s time the Abbey Church decayed and the day of ruin seemed not far distant, when an Englishman stepped forward to restore it to the nation from his own private purse. Lord Grimthorpe alone has given over £150,000 to repair and renovate the structure. We are free to criticise the work, but we cannot be ungrateful for the munificence that has done so much for this relic of the past. After the Abbey Church the party proceeded to the Gatehouse, the only other existing part of the old Abbey. Here one of Caxton's printing presses was early set up. In more modern times it acted as a gaol. Its roof, with some fine groining, was much admired. After this, tea at the "Fighting Cocks," an old hostelry on the banks of the Ver, broke the round of archæological records. Here, in a pleasant little speech from Mr. Avenell, Chairman of the Council, the guide, Mr. Westell, was heartily thanked for the great trouble he had taken in preparing the ramble, and for the very successful way in which it was being carried out.

Then the party proceeded to the Verulam woods, and a large circular sweep of arable and grass land was pointed out as the site of the ancient city of Verulam, of which only fragments of the old wall remain. In early times it was probably a British stronghold associated with Cassivelaunus and Boadicea. Then came the all-conquering Roman and, seeing the advantages of the site, erected his city there, the Saint's shrine being then in a wood on the top of the gently rising promontory opposite. In succeeding years, as the Abbey Church arose, the people clustered round it, leaving the grass to grow and the birds to inhabit old Verulam, till its semblance to a town was wholly lost. Meanwhile the city on

the hill flourished, till in the time of the Wars of the Roses it was a place of some importance. To understand the history of the ancient ground, the party walked round the old site. From there the route lay by the banks of the Ver to St. Michael's Church to inspect the monument to Lord Bacon, the ancient pulpit with the iron stand for the hour glass, and the curious picture, in the vestry, of the passage of souls. A little further on the guide pointed out a ploughed field as the site of an old Roman theatre. When opened up about thirty years ago, it was found to be a very fine and almost perfect specimen of Roman work, but it has since been covered in. Full of historical interest and of striking archæological records, it is seldom that a Saturday afternoon ramble has afforded more valuable and interesting information.

August 8.—This was a go-as-you-please ramble over the downs and fields near Coulsdon Station. These uncultivated slopes proved rich in botanical interest. Clumps of golden ragwort, some of them measuring four feet in height, mingled with the lavender blossom of *Scabiosa arvensis*, and the redder-tinted sweet marjoram in profuse and picturesque wealth. Lowlier, on the ground, were the basil thyme, wild thyme, bartsia, eye-bright and lady's-fingers. By the hedge-side wild basil (*Clinopodium vulgare*), *Phyteuma orbiculare*, *Gentiana amarella*, and the two "hardheads," *Centaurea Scabiosa* and *C. nigra* bloomed in abundance. Above trailed the creamy blossoms of *Clematis Vitalba*, and the reddening berries of *Viburnum Lantana*. Near by were noticed the beautiful pale lilac flowers and glaucous foliage of the opium poppy, *Malva moschata*, the crown of all our wild mallows, the pretty little vervain, the teazle and the wild mignonette. The downs also yielded their own tribute. Squinancy-wort and *Linum catharticum* in flower, and *Spiræa Filipendula* in seed only. A number of nests were examined, especially one that had been appropriated and added to by a dormouse. Eighteen members of the Field Club joined the ramble during the afternoon.

FORTHCOMING RAMBLES.

September 5.—Chipstead and Banstead Downs. Meet at Chipstead. Charing Cross 2.6, London Bridge 2.15, East Croydon 2.36, Purley 2.44. Tea at Banstead. Return from Cheam. Conductor to be provided by Mr. Edward A. Martin, F.G.S.

September 12.—Winchmore Hill and District. Trains from Broad Street 2.40, Moorgate 2.27, King's Cross 2.32; enquire if necessary to change at Finsbury Park: fares 1s. 4d. Guide, Mr. Oliver G. Pike.

September 19.—Epping Forest. Meet at Chingford; cheap return tickets, 1s. Train, Liverpool Street 2.23. Tea at High Beach. Guides, Mr. and Mrs. Douglas Wilson.

September 26.—Oxted to Marden Park and Caterham Valley. Take single tickets to Oxted by 2.30 from Victoria (L.B. and S.C.), or 2.25 from London Bridge. Assemble at Oxted 3.30. Tea at Railway Hotel, Caterham Valley. Return from Caterham Station. Conductor, Professor Boulger.

These finish the Field Club weekly rambles for 1903; but it is hoped that we may join in the Essex Fungus Foray in October, and there is a possibility of a visit to Waltham Abbey in the same month.

NOTICES TO CORRESPONDENTS.

1. All communications for NATURE NOTES must be authenticated with name and address, not necessarily for publication.

2. The return of an unaccepted contribution can only be guaranteed when it is accompanied by a stamped and addressed envelope. We cannot undertake to name specimens privately, to return them, or to reply to questions by letter.

3. All communications for any number must be in the Editor's hands by the 10th of the preceding month.

4. Communications for NATURE NOTES, books for review, specimens for naming, &c., should be addressed to the Editor, PROFESSOR BOULGER, F.L.S., F.G.S., 11, Onslow Road, Richmond, Surrey.

5. For the supply of the Magazine to others than members, or for back numbers (except in the case of new members), address the publishers, with stamps at the rate of 2½d. per number, Messrs. JOHN BALE, SONS AND DANIELSSON, Ltd., 83-89, Great Titchfield Street, London, W.

6. Letters connected with the business of the Society, subscriptions, &c., should be addressed to the local Secretary, or the Secretary to the Society, Mr. R. MARSHMAN WATTSON, 20, Hanover Square, W.

Nature Notes:

The Selborne Society's Magazine.

No. 166. OCTOBER, 1903. Vol. XIV.

OBJECTS OF THE SOCIETY.

To preserve from unnecessary destruction such wild birds, animals and plants as are harmless, beautiful, or rare. To discourage the wearing and use for ornament of birds and their plumage, except when the birds are killed for food or reared for their plumage. To protect places and objects of antiquarian interest or natural beauty from ill-treatment or destruction. To promote the study of natural history.

SELBORNIANA.

Gross Cruelty to a Seal.—We have received the following from our Member, Mr. F. Primrose Stevenson, F.Z.S.:—

"At Lowestoft Police Court before the Mayor and other magistrates, a labourer was charged by the local representative of the R.S.P.C.A. with cruelty to a seal, which was being exhibited in a square box about four feet by three. The Inspector, after detailing the acts of cruelty, said the defendant hired the seal, and instead of returning it at 10 p.m. the same evening turned it adrift on to some allotments, where it was found at 5 o'clock the next morning. The magistrate imposed a fine of £1, a penalty, I suppose, which would not be considered excessive in a case of ordinary trespass, and further allowed him a month in which to pay the money! In less than forty-eight hours the man was again exhibiting this wretched creature in a broiling sun. Surely it is about time that such wanton cruelty was repressed by sterner methods, so long as the law permits the dumb creation—including bears and monkeys—to be dragged about in the public streets under conditions which are totally foreign to their nature!"

The Spoliation of British Scenery.—Mr. E. G. Aldridge, F.G.S., F.R.Met. Soc., writes to us with regard to what he terms the "spoliation" of British scenery. We think he means rather its destruction; but in so far as our scenery may be said to be a national property we may perhaps be said to be despoiled by its destruction; and, waiving all discussion of words, we heartily agree in Mr. Aldridge's protest. He writes as follows:—

"The spoliation of British scenery has now come to such a pass that I wish to direct special attention to it. I write not of railways, nor of the spread of towns, but of the two great evils of Poles and Iron. By 'poles' I mean poles telegraphic, telephonic and electric. If any reader of these lines should happen to be at Cheltenham, let him take a short journey to Cleeve Hill, and he will at once perceive the evil to which I would call attention. This lofty eminence commands a fine prospect over Gloucestershire and Worcestershire; but the foreground of the view is a confused assemblage of poles, hideous and abhorrent. There are telegraph poles, electric-tramway poles, and telephone-poles, the last often appearing to lead to Nowhere-in-Particular, and to be seemingly unnecessary. A somewhat similar spoliation is observable between Portrush and the Giants' Causeway.

"Poles everywhere are more or less abominable. On a woodland road they may be partly concealed by foliage; but amidst the barrenness and nakedness of a mountain-pass, or when they appear against the sky, few things can be more objectionable. It sometimes happens that on a serpentine road, the poles bordering on one curve are brought into apparent close connexion with those on a farther and contrary-wending curve, and then we have an ugly representation of the 'forest of masts' in a well-frequented harbour. Sometimes, as in Glen Farg, some miles from Perth, the Government and the railway poles combine somewhat in this manner: enjoyment is out of the question.

"It is impossible to say where one can go to be free from these annoyances. This summer I have been much distressed by them in such out-of-the-world places as Connemara and the island of Achill, indeed more so there than in some districts possessing a much greater population. The wonderful Pass of Kylemore is marred by them, and so is the road from Achill Sound to Dugort. In Scotland one of the most distressing instances occurs on Deeside, between Balmoral and Ballater, for here we have poles on both sides of the highway. The Government, which should be the watchful father of the people, conserving not only their liberties, but their very holiday and health resorts, is of course the greatest offender in this matter, except, perhaps, the railway-companies. But what is so surprising to me is the apathy of the general public themselves: they seem even to applaud, or at least to approve. I would suggest that some persons of rank and influence take the matter up, with the view of getting the wires laid underground; or could not a suitable pipe be invented which would run along the hedgerows, dipping under the soil for a few yards whenever a gate was arrived at? The present method is, I suppose, the 'cheap and nasty' one, but if persisted in, it is very clear that it ought not to be in vogue amidst the beauty-spots of the country. It would be an immense boon if the poles were made to terminate temporarily at the commencement of any stretch of exceptional scenic importance (the Pass of Kylemore, for instance), to be resumed farther on, where the scenery descends to about the average point of picturesqueness.

"The other evil is Iron—galvanised iron. Formerly our farmsteads were pictures of rustic beauty. Now they resemble ginger-beer factories or engine-fitting sheds. A great deal may be done to minimise the bad effect by applying red wash or paint, or even tar, but the farmers will not go to the necessary expense. I would suggest that everyone who is acquainted with an offending farmer or other guilty person, should employ persuasion and convincing argument in order to bring about a better state of things in the now scenically ruined villages and hamlets of Britain. Some day, when we are really a civilised people, there will be laws about this."

It may, perhaps, be possible to make an appeal to the farmer —which may be the more effective as being addressed to his pocket—to the effect that galvanised iron is not a very durable substance unless painted, so that, apart from our merely "sentimental" æsthetic arguments, a coat of a dull red or dark green paint to his buildings, or even of tar, will probably prove to his own decided advantage. We would take this opportunity of once more urging upon our Members that they should use all their influence upon parish and district councils to prevent the needless destruction of our hedge-banks and the grass edgings to country paths under the plea of road-improvement. The unnecessary introduction of stone kerbs and the yet more indefensible plastering of the banks with the mud cleared out of the ditches is rapidly exterminating the wild flowers of our lanes.

Practical Rural Botany.—Our Member, Mr. George Stanton, of Park Place, Henley-on-Thames, was recently awarded a silver medal by the Reading Horticultural Society for a useful exhibition of named specimens of wild flowers and fruits, including especially the dangerously poisonous species, such as *Atropa Belladonna*, *Arum maculatum*, *Solanum nigrum*, and the perhaps less certainly dangerous *Solanum Dulcamara*. Such series at rural flower-shows may be most instructive, without involving any extermination of rarities.

Pollution of Windermere.—In July last the attention of the Council was directed by Mr. Henry W. Stock, of Petersham, Surrey, to the serious pollution of Windermere by the casting of the furnace-ashes of the pleasure steamers into the lake. The Council addressed a complaint on the subject to the Windermere Urban District Council, and have now been informed in reply that that body has called upon the owners of the steamers to stop this nuisance.

A Plea for the Otter.—In *Fores' Sporting Notes and Sketches* Mr. M. B. Durham advocates the preservation of the otter. "Out of the teeming millions of coarse fish that will be found in such rivers as the Thames," he says, "can it for a moment be believed that the damage wrought by one or even half a dozen otters in, say, twenty miles of water would make any appreciable difference at all to the sport of the angler? To my mind the suggestion is ridiculous. What is thought of a man who in such a stream as I have mentioned kills a kingfisher? And, indeed, is not that gaily-plumaged frequenter of our rivers and streams very properly protected by law? Yet let one of our field naturalists who has watched these birds fishing tell us which of the two—an otter or a kingfisher—does most damage to a stream. I believe the naturalist's verdict would be the kingfisher. . . . But I do not think it just or reasonable, where both creatures have a great attraction for a lover of

Nature, to wage inveterate war against the lesser, whilst a wise Government punishes the man who shoots the greater fish-poacher."

COUNTY CHARACTERISTICS.

TO the sorrow of the antiquary and the student of folk-lore, but to the delight of political dreamers, our English counties are rapidly losing their distinctive characteristics. The physical features of the inhabitants are becoming hopelessly merged into a common type. One finds an increasing number of Sussex people who are not blue-eyed, as were their forefathers. The Cumbrian dalesmen are not so uniformly tall and stalwart as formerly, and no longer is the proverb true—if more than the latter half ever were true—"Cheshire born, Cheshire bred, strong i' th 'arm, weak i' th' head." More than this, the strains of particular groups are now considered to have been almost from the outset very mixed. For instance, around the old Danish boroughs, the Celtic element is still very strong and Saxon, not to say Iberian, blood mingles with both races. The boundaries of the shires are occasionally ill-defined, a part of Worcestershire, for example, is insulated in the county of Gloucester. Nor are the areas of episcopal sees always co-terminous with those of counties. Religious superstitions and commercial customs are vanishing at an accelerating rate, and the number of "test words" by which dialects may be differentiated gets smaller and smaller. There has been a slight counter-movement; the delimitation of districts for Parliamentary and County Council purposes, the quickening influence of territorial regiments, and the development of county teams for football and cricket, tend towards county patriotism, though in the last-named department professionalism modifies the effect to a marked degree.

Our counties, as separate areas, may safely be traced back a thousand years. Mr. Grant Allen, in "Anglo-Saxon Britain," referring to the close of the Saxon period, wrote: "The subdivisions of the kingdom were now pretty generally conterminous with the modern counties. In Wessex and the east the counties are either older kingdoms, like Kent, Sussex and Essex, or else tribal divisions of the kingdom, like Dorset, Somerset, Norfolk, Suffolk and Surrey. In Mercia the recovered country is artificially mapped out round the chief Danish burgs, as in the case of Derbyshire, Nottinghamshire, Bedfordshire, Northamptonshire and Leicestershire, where the county town usually occupies the centre of the arbitrary shire. In Northumbria it is divided into equally artificial counties by the rivers." Parenthetically it may be noted, that the term "shire" is generally

restricted to those areas which originally formed part of Wessex, Mercia and Northumbria, and in these cases the county name usually follows that of the county town.

Some counties are familiar to us on account of the nicknames applied to the natives. The Yorkshire Tyke, the Sussex Calf, the Nottingham Lamb, the Norfolk Dumpling and the Kentish Nut, are well known. "Silly Suffolk" has been claimed as an honourable title, on the ground that the word has its primitive meaning of "holy" or "innocent," and has reference to the abundance of churches, monasteries and shrines. "Hampshire Moonrakers" are slanderously said to have tried to rake the moon out of a pond. "Lincolnshire Yellow-bellies" got their name either from the jaundiced appearance of ague-stricken fen men, or from their reputed similarity to the frogs of their marshes. Commodities, too, help to keep counties in memory. The hops of Kent, the cheeses of Cheshire, the cider and cows of Hereford and Devon, the sheep of Lincolnshire and Leicestershire, the potatoes of Yorkshire—"Yorkshire Reds"—are common examples. Northampton has been called "the county of springs, spires and squires." The springs are due to the fact that in Northants the porous oolite lies on clay; the multitude of churches and the roll of rich landowners attest the fertility of the soil. The name of Rutland bears witness to the red iron ore of its Middle Lias. Kent, like Cæsar's Gallia, has been divided into three parts. The first is described as containing wealth without health; the allusion is of course to the marshy flats by the Thames. The chalk downs, being barren, represent health without wealth, whilst the outcrop of the Lower Greensand, in the south of the county, produces both health and wealth. A rapturous recital of the productions of Kent has been inscribed on the edges of a table of a summer-house at Davington, near Faversham. The table was formerly a sounding board over the church pulpit. The lines, in old English letters, run thus:—

> "O famous Kent, what country hath the soil
> That can compare with thee, which hast within thyself
> As much as thou canst wish? Thy conies, venison, fruit,
> Thy sorts of fowl and fish; as what with strength compares
> Thy hops, thy corn, thy wood;
> Nor anything doth want that anywhere is good."

Contrast this account with that contained in Dr. Johnson's lines, written in a Cornish inn:—

> "O Cornwall, barren, wretched spot of ground,
> Where naught but rocks and stones are to be found,
> Thy barren hills won't find thy sons with bread,
> Or wood to make 'em coffins when they're dead."

The verse reminds one of Sydney Smith's description of Scotland as the "knuckle-bone of the earth." The Isles of Scilly have fared little better than the parent country:—

"Rocks and sands, and barren lands,
A church without a steeple,
Houses built of shipwrecked wood,
And most imposing people."

The Scillonians resent the last line, and substitute the word "hospitable." Agricultural rhymes are often very apt and very true. An old one of the time of Charles II., or earlier, occurs in Thomas Baskerville's "Journeys," a book compiled in that reign, and preserved among the Duke of Portland's MSS. at Welbeck. It runs:—

"Dorsetshire ewes for the early lambs,
And Warwickshire breeds most excellent rams."

Another ancient piece of doggerel is quoted by Leland:—

"Essex full of good housewifes,
Middlesex full of strifes,
Kentshire hot as fire,
Sussex full of dirt and mire."

The reference to the despicable roads on the Weald clay is particularly accurate, and the fiery traditions of Kent are justified by the various revolts of its sturdy yeomen. A picture of prosperity and wealth is portrayed in the lines:—

"With wholesome fare our villa's stored,
Our lands the best of corn afford,
Not Hertford wheat, nor Derby rye,
Nor Ipswich pease, can ours outvye.
The largest ox in England bred
Was in our verdant pasture fed."

It is a curious fact that some counties are little heard of, even after allowance has been made for their small size and population. How rarely in conversation does one hear of Huntingdonshire or Bedfordshire, yet the former is connected with the name of Oliver Cromwell, and the latter with that of John Bunyan. Westmoreland is in the same predicament, and to take a more important county, Cornwall suffers the penalty of its remoteness from the centre. But here literature has its influence. Devon and Cornwall have been made known to many who have never visited them through the writings of Robert Stephen Hawker, Baring-Gould, and Charles Kingsley, Kingsley, too, has revealed the charms of the mud flats of Essex and the morasses of Hereward's fens. The beauties of Wessex are familiar to all readers of Thomas Hardy and Richard Jefferies. George Elliot has immortalised parts of Warwick and Derby. John Clare wrote lovingly of his native Hampshire: George Crabbe's Suffolk town of Aldborough is the constant theme of his poems: Cowper has eulogised the gentle scenery of the Great Ouse. The Lincoln Wolds and marshes influenced not only the earlier but the later poems of Tennyson. Barnes has given us a knowledge of the Dorset dialect. Of the scat-

tered portions of our country Sir Walter Besant has dealt with the Scillies, and Mr. Hall Caine with Manxland. What will writers do when the county characteristics are "crushed out by the greater weight of nationality?"

Battersea, S.W. WALTER JOHNSON.

AN AUTUMN RAMBLE.

SCARCELY a cloud is to be seen in the blue sky, the sun is shining, and the morning mist is quickly disappearing before its genial warmth. High over our heads a lark is singing as rapturously as though summer, not winter, were at hand.

But as we leave the road and cross the dew-drenched field, there are unmistakable signs of autumn. The hedgerow is a study in colour: scarlet chains of bryony berries twine themselves round the bushes and glisten in the sunshine; and blackberries, red, purple, and black seem growing everywhere. The brambles fling their long trailing branches (covered with leaves which are just beginning to turn crimson) around the bushes, and mingle with the lovely foliage and red fruit of the wild rose. Here are a few late honeysuckle blooms climbing up the hedge, and down under the sheltering bushes on the bank nestle some hart's-tongue and polypody ferns. But there are not many flowers left; only a few sprays of ragwort which make a patch of gold among the grasses, and two or three small poppies, waving their heads disconsolately in the breeze.

Our path leads to a wood which glows with different shades of red, yellow and brown, varied by an occasional touch of sombre green. Two jays fly screaming from tree to tree, a peewit gives a sad weird cry, and a wood-pigeon rises from the field and beats the air with his noisy wings. But when we enter the wood itself there is silence, not a sound can be heard but that of an occasional acorn, as it comes "pattering to the ground." Now the silence is broken by a rustling among the dead leaves, a squirrel is running towards us, but on catching sight of us he darts up the nearest pine tree chattering angrily as he goes. It is difficult to watch him, as he leaps nimbly from one branch to another, for his fur closely resembles the colour of the trees.

As we walk through the bracken under the oaks and beeches, a breath of wind blows through the trees and a shower of gold and brown leaves falls upon us. In this holly tree (flaming with scarlet berries) is the thrush's nest that we found last spring. *Then* it had five blue eggs in it, and was neat and trim looking: *now* it contains nothing but dead leaves, and has a decidedly untidy and damp appearance. Further on in thick

bush we come upon a dome-shaped nest with a hole at one side, where a dormouse had made his home. As we touch the nest the whole family come running out, father, mother, and three young ones, leaving us to wonder how five dormice could possibly exist in such a small space. But our meditations are cut short as a shot echoes through the wood, creating a great disturbance amongst the woodland dwellers. Magpies and jays dart out from the wood, screaming and chattering: the pheasants hurry into the bushes or fly up to the trees: the rabbits scuttle into their holes; and the squirrels run higher up the branches.

Our sanctuary thus violated, we too prepare for flight; and as the reports get nearer and clearer, we hurriedly leave the wood and its perturbed inhabitants, and regain the road in safety, not, however, without experiencing a feeling of regret at such an abrupt and melancholy ending to our morning's ramble.

EDITH M. HOWES.

THE SEA AFTER A GALE.

FEW people, comparatively, have ever seen the effect on the sea of a powerful gale continued without intermission for three or four days and nights; and to those who have not I believe it must be unimaginable, not from the mere force or size of surge, but from the complete annihilation of the limit between sea and air. The water from its prolonged agitation is beaten, not into mere creaming foam, but into masses of accumulated yeast,* which hang in ropes and wreaths from wave to wave, and where one curls over to break, form a festoon like a drapery from its edge; these are taken up by the wind, not in dissipating dust, but bodily, in writhing, hanging, coiling masses, which make the air white and thick as with snow, only the flakes are a foot or two long each: the surges themselves are full of foam in their very bodies, underneath, making them white all through, as the water is under a great cataract; and their masses, being thus half water and half air, are torn to pieces by the wind whenever they rise, and carried away in roaring smoke which chokes and strangles like actual water. Add to this, that when the air has been exhausted of its moisture by long rain the spray of the sea is caught by it,

* The *yesty* waves of Shakespere have made the likeness familiar, and probably most readers take the expression as merely equivalent to *foamy*; but Shakespere knew better. Sea-foam does not, under ordinary circumstances, last a moment after it is formed, but disappears in a mere white film. But the foam of a prolonged tempest is altogether different, it is *whipped* foam, thick, permanent, and in a foul or discoloured sea, very ugly, especially in the way it hangs about the tops of the waves, and gathers into clotted concretions before the driving wind

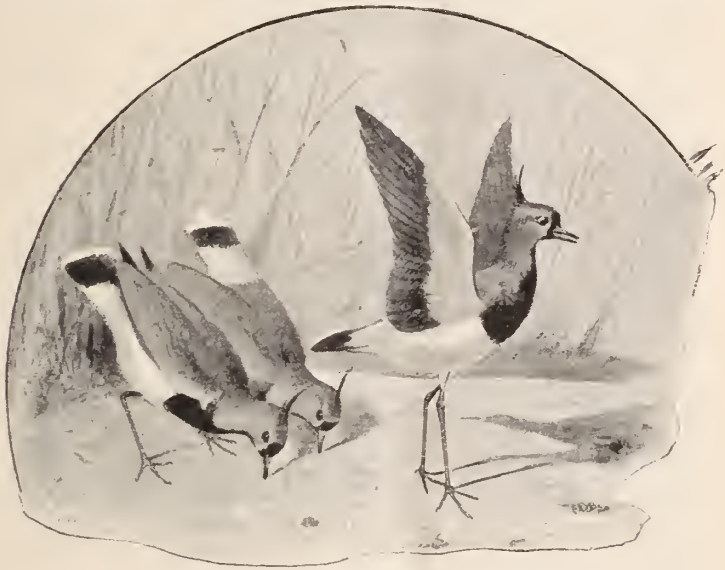
and covers its surface not merely with the smoke of finely divided water, but with boiling mist; imagine also the low rain-clouds brought down to the very level of the sea, as I have often seen them, whirling and flying in rags and fragments from wave to wave; and finally, conceive the surges themselves in their utmost pitch of power, velocity, vastness, and madness, lifting themselves in precipices and peaks, furrowed with their whirl of ascent, through all this chaos; and you will understand that there is indeed no distinction left between the sea and air; that no object, nor horizon, nor any landmark or natural evidence of position is left; that the heaven is all spray, and the ocean all cloud, and that you can see no farther in any direction than you could see through a cataract.

RUSKIN: "Modern Painters."

REVIEWS AND EXCHANGES.

The Naturalist in La Plata. By W. H. Hudson, F.Z.S. Illustrated by J. Smit. Fourth Edition. J. M. Dent and Co. Price 5s.

FREQUENTLY within the last few years we have been indebted to Mr. Hudson for books giving us the fruit of his observations and reflections upon English natural history. Each of these books has recommended itself by a rare combination of the qualities of the careful and enthusiastic observer with those of the



DANCE OF SPUR-WINGED LAPWINGS.

(From Mr. Hudson's "The Naturalist in La Plata," by permission of Messrs. Dent and Co.).

reasoner capable of taking a wide view of the problems of zoology. At the same time we have often thought that there were other men who might have done this work in our own country as well, or nearly as well, as Mr. Hudson. But it is precisely the recognition that there was no one capable of presenting to us the

SENTINEL HUANACO.

(From Mr. Hudson's "The Naturalist in La Plata," by permission of Messrs. Dent and Co.).

state of Nature in the Argentine as he has done, that has made "The Naturalist in La Plata" take rank as a Natural History classic from its first appearance in 1892. Mr. Hudson has changed his publishers, and the present cheap but excellently got-up edition of his *magnum opus* has new plates by the skilful pencil of Mr. Smit, of which, by Messrs. Dent and Co.'s courtesy, we are able to reproduce a specimen, together with one of the smaller drawings illustrating the celebrated chapter on Music and Dancing in Nature, in which the author is seen at his best.

Animal Life and the World of Nature. Vol. i., July, 1902—June, 1903. With 718 illustrations (including 18 coloured plates) direct from photographs. Hutchinson and Co. Price 10s. 6d. net.

This sumptuous volume is described as the first supplemental volume to "The Living Animals of the World," with which it is uniform, and as "a pictorial record of the world's progress in Zoology and Natural History." With nearly twice as many illustrations as it contains pages, and almost all these from photographs taken direct from life, we can hardly be unjust in saying that the illustrations are the special feature of the work, though with such contributors of literary matter as our President, Sir Harry Johnston, Mr. Lydekker, Mr. Hudson, Mr. Warde Fowler, Mr. Saville-Kent and Mr. Enock, it is obvious that the excellence of the letterpress has not been neglected. We do not remember ever to have seen a better specimen of colour-printing than the Brahma Fowls, from a drawing by Harrison Weir, and many will be glad to have the frontispiece of Okapis from Sir Harry Johnston's brush. If the value of photography for illustrating bird and mammalian life required demonstration it has it in this volume; but though there are brilliant exceptions, we are not so uniformly impressed with its success when applied to insects. The anecdotes with their "fancy" illustrations seem to us unworthy of the longer articles. We could not, however, wish for a handsomer Christmas gift-book for any young naturalist, and we trust this may be only the first of many such volumes.

Field-Path Rambles, Series 25, *comprising Routes round Dorking, Boxhill, Gomshall, Horsley, Ranmore, Abinger, Leatherhead, &c.* By Walker Miles. With 27 Illustrations. R. E. Taylor and Son. Price 1s. net.

This re-issue of the first section of the Mid-Surrey series of rambles contains twenty-seven in lieu of the former five illustrations, and a sketch map of the Surrey Hills. Those who have rambled with our Abinger Branch over the "Roughs" will be glad to have the reminder of the Wilberforce Memorial Cross,

WILBERFORCE MEMORIAL CROSS.

which, by permission of Messrs. Taylor, we are able to give here. Our opinion of the perfection of these little guide-books must by now be well known to our readers.

Our Animal Friends. Vol. xxxi., No. 1, September, 1903. Price 10 cents.

We congratulate our venerable transatlantic contemporary on appearing in a new, handier, and illustrated form.

Animal World Illustrated. August and September. Price 2d. monthly.

We wish we could see an improvement in our R.S.P.C.A.'s organ comparable to that of its American sister journal, but it remains as childish as ever, though we were long ago promised something more suited for adults. In the August number is an article on the sundew that bristles with errors. Two of its illustrations are described as *Drosera rotundiflora* and *Drosera Angelica*. These plants are said to be "pretty well confined to the north," and their leaves to be surrounded by "hollow" hairs.

RECEIVED: *Board of Agriculture Leaflets*, Nos. 88, 91, 92; *Hop Aphis*, *The Pine Beetle*, *Bunt and Smut*; *The Victorian Naturalist* for July; *Devonia* for June; *The American Botanist* for June and July; *The Animals' Friend* for August; *The Humanitarian*, *The Irish Naturalist*, and *The Agricultural Economist* for August and September; and *The Commonwealth* for September.

NATURAL HISTORY NOTES.

32. Is Nature Cruel?—The majority of persons who never study Nature, look upon her as beautiful and charming, but at the same time they consider her a cruel tyrant, oppressing the weak in favour of the strong, and inflicting untold agonies on her victims, which "all-inventive man," as Sophocles calls him, has succeeded in escaping through his superior brain. Nor are those persons who thoroughly study her without this view. A cat playing with a mouse, a spider "mesmerising" a fly, the tiger's deadly spring on the antelope, the hawk's fell swoop on the cowering bird, the hunted stag, fox and hare, the wounded grouse, the trout's last leap for life to break the angler's "gut," all appear to be the embodiment of tyrannical cruelty even to the most ardent lover of Nature. Now with reference to all this, I should like to direct your readers' attention to a book which has appeared only recently and is called the "School of the Woods," by William Long. The great underlying principle in that book, which I cannot but think correct, is that it is perfectly inconceivable, throughout all these thousands of years, during which animals have lived in their natural conditions without man's interference, that the species of animals which are constantly preyed upon by stronger forms of life could possibly have survived the pain and terror of intense watchfulness and anxiety for themselves and for their young without some help from Mother Nature to alleviate their labours; that is, that their bodies could not stand the strain and they would become extinct. Although he does not say that in so many words, yet he proves what comes to exactly the same thing, namely, that animals are relieved from the pain and anxiety which we should be addicted to if we were in the same state. Mr. Daubeny, who has appeared as the champion against Nature in your columns, notes various instances in your last issue, and amongst others, one of apparent cruelty of a beetle to a worm, which latter preferred the open pathway and the chance of being picked up by birds to being devoured by the beetle in his underground hole. But the struggles of the worm in his endeavours to escape might just as well have been the instinct of self-preservation which was probably taught to him in his childhood by his parents, viz., to wriggle away and expose himself to any danger rather than to allow himself to be captured by the arch-enemy of the worm tribe. This teaching, by the bye, is always resorted to among the higher forms of wild animals to their young, namely, to obey their parents and to get away from danger, not necessarily to put themselves in mortal terror of it. Why then should this teaching not extend to the worm as well? I know that this theory needs more proof, only Mr. Daubeny's theory needs proof also, and the chances being even, why should not Nature, who orders the movements of every living thing, be a kind and gracious being instead of a wicked and cruel tyrant? There is no reason why she should not, and there is no reason why she should; but when one sees the joyfulness of most of Nature's wild things, such as the trout, which

leaps at your flies for fun, as every angler knows, the birds that sing long after breeding season, when there is no rivalry among them for the possession of mates, such as the robin, the lark, the willow-warbler, which I heard only yesterday (September 1), the rabbits that come about and play in the cool of the evening, the birds, such as carrion crows, hawks, swifts, which I have seen sailing high in the air on a breezy, sunny summer afternoon quite listlessly, for hours, as if they were exulting in their existence and were glad to be alive, all these seem to show that animals have their hours of gladness, which I doubt whether they would if they were overcast with fear of pain and terror, as we should be if we were in their position. Let me give an instance of what sympathetic people would consider pain. I have often heard rabbits squeal when caught by dogs, and always thought it was a sign of the pain they felt. Once, however, I saw a rabbit coursed (a thing which, by the bye, I will not see again, for it is most cruel and unsportsmanlike), and the creature did not know where to go, for it was taken from its natural haunts, and while it was being coursed it squealed, evidently showing that it was frightened and not that it felt pain. We may therefore conclude that while a rabbit is in the fangs of a dog it is frightened and does not necessarily feel pain (for the short time it lasts, for it is soon dead); but while it is being hunted, as long as it knows where its hole is, or the bushes to hide in, it is not frightened. Another incidental proof of this is that I have often and often known rabbits refuse to go into a hole unless hard pressed, and this tends to show that the creature rather enjoys eluding the dog till he gets things made too hard for him, and then pops into his hole. This I have noticed again and again.

May I cite one more instance. A few days ago, a man who had been wounded in action in Egypt told me that he never felt the slightest pain the whole time, not even when the bullet was being taken out. This seems truly incredible. Now if this is true in some cases with man, it is far more likely that the bird in the talons of a hawk, and the deer under the spring of the tiger, feels no pain at the sudden shock, especially when the nervous organisation of a wild animal is coarser and less sensitive through contact with open air and exposure to all sorts of wind and weather, as it undeniably is. The fact, however, remains that proof either way is most difficult, nay, almost impossible, and I cannot but recommend all who are interested in the matter to read Mr. Long's book.

Pen Moel, Chepstow, M. P. PRICE.
September 2, 1903.

33. A few Local Names.—Our rustics here are often intelligent observers and give me curious information, which if at times at variance with accepted facts, is almost always accompanied by some local belief or name that gives spice to what they say.

Of weasels, clearly distinguished from stoats, they say there are two kinds, which seem to differ in size only. The larger are "weasels," the smaller "mousers." In winter the stoat is a "minifer." Short-tailed field mice are "moggies," shrews "rannies," and dormice "sleepers."

Amongst birds the green woodpecker is the "wood-sprite" or "wet-wet-more-wet." Wrynecks are "leaders," or "cuckoo leaders." A goldfinch is a "King Harry," a great tit a "saw-sharper," a blue tit a "prickcheese." Long-tailed tits have two names, "Caper-long-tail," and "pudding poke," this latter from the shape of the nest, which is considered to be like a bag in which puddings are made. Missel-thrushes are "misselers," and hedge sparrows "hedge betties." As a thrush is a "mavis," and a snail a "hod-me-dod," or "dodman," it is not uncommon to see a mavis "knapping" a dodman against a stone in our East Anglian roads.

Toads are of two kinds, the "walking toad" and the "crawling toad." This has nothing to do with the natterjack, of which my humble neighbours are quite ignorant. All toads are "Charlies."

Moles not being distinguished here by the name of "wants," the following piece of information comes from other parts. A city cyclist, seeing a quantity of small hillocks in a field in the country, asked a rustic what they were, and was told they were "wanty tumps." "What is that?" said the tourist. "What the wants make" being grunted out, he passed on very little if any the wiser.

July, 1903. EDMUND THOS. DAUBENY.

34. Possible Heredity.—The Indian Markhor (*Capra falconeri*) is a well-known inhabitant of the mountainous countries lying north and west of that land of the sun, where it may be found at home among the wildest precipices, often in considerable flocks. On the north-west frontier hill of Shiekbudin I have seen more than twenty of them go straight down a lofty cliff, which from above seemed more nearly, or more frequently, vertical than anything else—dropping from ledges of scarcely noticeable width to others 30 or 40 feet below, so narrow as to afford scanty foothold, but always making this secure for the next spring, while avoiding the avalanche of stones and dust which accompanied their descent. At the end of this they vanished among the foothills and ravines, so far beneath that they looked hardly larger than good-sized dogs. The long, straight, spirally-twisted horns of the animal always looked large for the body, which might be in a way as big as that of a sheep, but more leggy, and its whole aspect, including colour, recalled a mixture of wild sheep, goat and deer. It was fine to watch one standing sentinel-like at gaze on the summit of some crag, with elevated nose and long horns thrown back, shaggy throat, and feet brought together—an attitude apparently characteristic of these beasts.

Not far from the hill already mentioned my camp happened to be pitched one day near that of the late lamented Sir L. Cavagnari, then principal political officer of that part of the frontier, and before the tragic journey to Cabul which cost him his life. On my way to dine with him I observed a young markhor tethered to a tent-peg in front of his tent; it had been caught by some villagers and presented to him by their chief. The tents stood in a perfectly flat plain, unbroken save where someone had thrown down a stone not as large as a man's head, that had evidently been used to supplement the ordinary heavy wooden mallet with which tent-pegs are driven, and upon this stone the imprisoned little markhor had perched himself, all four feet together, in exactly the position its wild relatives were seen to occupy, it having sought the only elevation of any kind within its reach to mount.

Many years afterwards, when passing a patch of waste weedy ground above the Sandy-Cove cutting of the Dublin and Wicklow Railway, I was surprised to see a well-grown tethered kid perched upon a stone in exactly the same attitude, instantly suggesting that of the young markhor as described above, and the thought whether some natural affinity between the wildlings and the partially tamer goat family had not led to the adoption of that special pose.

BENWYAN.

35. Squirrel Carrying Young.—When walking on the road from Elveden to Thetford, a squirrel crossed the road in a very careful and cautious manner (not in their usual scampering style). This caused me to be interested, so I stopped and watched it go through the hedge into the field. After waiting about five minutes it made its appearance on the road again, but this time it had something in its mouth. Being rather curious to know what it was carrying I made a noise and frightened it. Scampering off, it dropped what it was carrying, which I found to my surprise was a young squirrel. After a few minutes the parent came and fetched its young and carried it into a plantation.

August 20, 1903. W. S. SPARROW.

36. Albinism.—I see an enquiry in an old number of NATURE NOTES, asking whether any reader has met with white and pied wild mice in any numbers. A few years ago whilst an outlying rick was being threshed in my parish a good many were killed, but I have never heard of any since. Our local mole-catcher brought me two silver-grey moles from near Castle Ashby lately—a new variety for our county.

Haselbeech, Northants. W. A. S.

37. Diving Birds, p. 53.—My brother's note on this has not, I believe, been answered, and there was, I think, a former one of his on the movement of birds under water. But I have only a few numbers of NATURE NOTES with me here. When in London last June I asked him to come and see the water-fowl from the bridge in St. James's Park, so that he could answer the questions that he had raised himself. But as his engagements did not then permit of his going to town, I will endeavour to answer, but only partially so, hoping that some other observer will take up the subject.

I will commence by asking the reader to refer to my note at p. 75, on the

shape of the wings of water birds, at the end of what is said under the heading of "Cold Weather."

One of the best and clearest observations I ever had was some twenty or twenty-five years ago. I was leaning over a wall at Plymouth, looking seawards and planning some engineering work. The tide was low, and in a hollow amongst the rocks, close under me, some ten or fifteen yards long and not so broad, was left a clear pool of water, which evidently contained good food for birds, for, under the surface of the water was flying, and using only the wings for propulsion, though, of course, the feet came into action in turning or getting out of the water to breathe, a bird of the proportions of a good-sized snipe, but not so stout and not of that tribe, for the bill was short. I kept quite quiet, resting my chin on top of the wall and hardly moving my eyes even, and so had a good ten minutes' observation. Fortunately we were not disturbed by passers-by.

A year or two ago, in the early morning, at about 6 or 7 o'clock, I was on the bridge at Zurich, where the clear water from the lake runs by at some speed. A dabchick came along, pecking at some small weed or lichen that grew at high water mark on the wall. This bird, when moving under water used the feet only. I took particular care to notice this.

On the water, and in it, at St. James's Park are some rather small ducks; I presume they are named shovellers, for the bills are large and spread out at the ends for grubbing for food in the beds of pools and rivers and seas. The bird is lighter than water—at any rate when he takes in air, as man can do also—and when he goes to the bottom he gets down and maintains himself there by upward strokes of the feet. Directly he ceases to use the feet in this manner his lightness very speedily brings him to the surface.

In the same way you can see at Aden the white soles of the natives who dive from the ship's side for silver coin thrown into the water by passengers. When I was quartered in 1869 at that rather warm station, from the high cliffs of Marshag I used to watch by the hour the movements of gulls and cormorants.

I do not see that gulls, as a rule, fly under the surface of the water, but the shape of their wings and body show that they can if they choose. They, however, prefer to seek food ashore to going far under water for it. See how they come inland some miles, when the sea is rough or in cold weather, to follow the plough.

I should be glad to have it stated how far gulls will come ashore for food. I have certainly seen them more than ten miles inland, but do not remember noticing them at Bromsgrove, where I was at school for seven years, and which place is some ninety miles from the sea coast—almost as far as you can get away from it in Britain.

I wish here to further show that water birds are by no means averse to other food than fish. Fishing eagles, of which there are many on the lake of Geneva, so long as the water is warm enough to attract fish to the surface, are also to be found in company with crows, in the trees on the steep Glion precipice above Montreux, waiting for the emptying of dust and refuse bins through the aperture in the wall at the top. Strike the door of the hole in the wall with your stick, and they are at once on the wing.

As to cormorants, they are much more adept fishers than gulls. See a number of the latter above a *school* of fish, dropping straight down, one by one, almost leisurely, just dipping in the water, and rising again with their food. Along comes a cormorant: like a flash of lightning, he pierces the water at any angle that suits him, is constantly active, and pursues his quarry under water.

There was, some time back, a discussion in the columns of the *Field* newspaper as to how the cormorant moves under water. I did not read all the correspondence, but so far as I can remember of what I did see, one side said he flew under water, the other that he used his feet. I think it will be admitted some day that this wonderful bird, when enjoying his liberty, uses his wings, but that in confinement, as in a Zoological garden, where his powers have degenerated and food is brought to him, he may use the feet only.

Obviously animals, including man and birds, before diving naturally take in air to make the body light under water and to oxygenate the blood—a double purpose. The use of the air bladder in fish I need not here explain. And as regards the use of wings or feet, I hope I may be allowed to say that for many

years of my life I have swam with my head above or beneath the surface of the water by use of arms, or legs, or both, or any one of the four, and I can maintain myself upright in the water with just the nose above the surface without any movement of the limbs whatsoever, in this last case in tolerably still water only.

My brother's remarks on the common wild duck agree very nearly with my observations made in the river Stour, the Dartmoor Chenybrook and elsewhere. Gilbert White, moreover, directs our eyes on this. But the wild duck feeds much in shallow water, and the young birds delight to clear the surface of pools of flies, no doubt to the chagrin of fish below. This, however, does not last long sometimes, as where pike are present to restore the balance of nature (p. 155). It is interesting to notice the great strength of the swan as he moves on the surface of the water by paddling. I have never seen him fly under water, for he relies much on length of neck to get food.

I may perhaps add, that whilst watching gulls and cormorants at Aden, another interesting sight was the pursuit of small fish by sharks, the former springing out of the water in their rapid flight from the enemy. I used to shoot curlew and quail, to vary a monotonous diet, at Aden, outside the barrier, taking the risk of my life amongst armed Arabs ; but I could not bring myself to fire at the pretty little deer with only shot in my gun.

Ivy Bridge, South Devon, GILES A. DAUBENY.
September 8, 1903.

38. Late Stay of Swift.—The swift has made a late stay this year. As a rule it takes its departure from this neighbourhood about the middle of August, but this year two or three stragglers were about on Septemher 1. In 1891 it stayed still later, the last pair remaining till September 5.

Fyfield, near Abingdon. W. H. WARNER.

39. Swallow's Nest.—In the yard near this house there is a large bell which is rung four times a day to call the coachman into the house. A pair of swallows have made a nest between the outside of the bell and the wood covering, and three young ones are ready to fly. When the bell is rung they leave the nest and sit on the wood, and in the morning the little birds sit on the outside and the parents feed them. The bell and covering of wood are twelve feet from the brick pavement.

Northop, Flintshire. E. SANDARS.

40. Story of a Robin.—Among the birds who came daily to our dole of crumbs last winter was an old cock robin. At least so we concluded him to be by the drooping tail, the loose, unkempt appearance of the feathers, the bare place, like a white ring, half round the neck, and the faded red of the breast. As the weeks went on this became more and more apparent. Nevertheless, in March he took a mate, a little robin in her prime, and the two chose a site on a narrow ledge near the roof inside my greenhouse, and began carrying up nesting materials. After a time they transferred some of the leaves to another ledge, some three feet away, still too far above our heads to look into. Having often observed that robins lay up a store of dry leaves, &c., near the intended nesting-place, as a sort of base of operations, I did not at first think there was anything unusual in it. But when in a day or two they were all taken back again, we got a ladder and made a nearer inspection. No nest had ever been built ! There was a very large pile of leaves and a little moss, but no attempt at any plan or arrangement. On a ledge near lay a robin's egg, freshly laid, and beneath in pots on the floor of the greenhouse two more, one sound the other in broken bits. On the same day (May 28) I saw the old bird carry up a larger leaf than usual. His last effort ! The two birds began collecting on March 22. They had gone on steadily for more than nine weeks ! After this the cock failed every day. He got weaker and strangely huddled up. But he could still eat the crumbs of biscuit and drink from the saucer of water which we had put on the floor of the greenhouse daily, after they began their work there. He knew the click of the door and came at once, never appearing afraid. The hen was shy and rarely came alone, but I occasionally saw him feed her. In these last days she returned the compliment, forgot her fears, and fed him, even while we stood near her. After every meal he stood still, slowly panting. Once I took him up in my hand, which I had never done before, but he was far too weak to make objections. Moreover, I think his sight was gone. The head was perfectly bald, and the rest

of the body felt like a little shrivelled bag of bones in a loose ball of soft and fluffy feathers. We tried to put a little strength into him by a little weak sherry and water, and he sipped it once. It only made him shiver suddenly and he would not try again. When I put him down he hurried, fluttering and stumbling, to a dark corner of the greenhouse where he had often repaired before, and there in the morning he was found dead. He had instinctively carried out the family traditions. He had counted the cost and laid up his store, but the poor little enfeebled frame could go no farther. M. GIBERNE.

41. Wagtails and Flycatchers.—Near here a flycatcher's nest was over a friend's study window. A pair of pied wagtails helped to feed the young birds, much to the indignation of the flycatchers: they did it for about two days.
September, 1903. EDMUND THOS. DAUBENY.

42. Birds of Prey.—In reply to the writer of a note on this subject, I have seen a jay fly off with a young half-grown bird from the nest in a tree near the house, returning in a few minutes for another victim, in spite of the furious attacks of the little parent birds. I saw a carrion crow do the same thing with the young of a pair of missel-thrushes, taking all the brood. I tried in vain to scare the robber. One day in the lane we saw a tussle going on between a magpie and some blackbirds. Frightened by our approach, the magpie flew off in one direction, the parent blackbirds and some young ones in the other, but on coming to the spot we found one young blackbird lying dead, killed by a wound in the back of its head, evidently inflicted by the magpie's beak. I think that there is nothing unusual in the occurrence.
Cumberland. E. H.

43. Broken Eggs.—In reply to query 2 (August number, page 177), I would suggest that the culprit was the jay. During the past season I have seen many instances of wild birds' eggs having been sucked by this species, especially those of the blackbird, and I have seen jays caught in the very act. Putting aside game-preserving as *unnecessary*, the jay perhaps does not do a great deal of harm; but that it destroys a number of wild birds' eggs and young I have not the slightest doubt about. It may be, however, that in this respect it is one of the balance-keepers of Nature.
St. Albans, W. PERCIVAL WESTALL, F.R.H.S., M.B.O.U.
August, 1903.

44. Hobby at Kenninghall.—While roaming over the fields about a mile from Kenninghall, on August 5, I observed a splendid hobby hovering over a large elm. After circulating three times it flew into the tree, disturbing some starlings which had settled there. It did not stop long in the tree as a game-keeper was shooting close by, but flew off in the direction of East Harling. A friend who was with me said a gamekeeper in the district had killed over a dozen hawks within the last three months. I am sorry to say a fine male hobby was killed at Rushford on August 8, and is now being preserved by a Thetford taxidermist.
Melford Bridge Road, Thetford, August 20, 1903. W. S. SPARROW.

45. Kingfisher Killed by Jack.—In 1897, near Northallerton, a lady friend of mine saw a kingfisher pursued by a jack. One snap bit off its beak, and though the bird got to land and she picked it up, it died soon afterwards.

46. Jack Killed by Hail (p. 176).—Was it really so? During thunder, accompanied by hail, fish leave the surface, and hailstones could not inflict fatal injury a few inches under water. I have known fish die in a mysterious manner, and the reason assigned has generally been thunder. On one occasion I visited a pond in a field with neither inlet or outlet, and not liable to contamination. Dead eels, many of considerable size, were in every direction. The water, which was from 2 ft. to 5 ft. deep, looked pure and clean enough, and a thunderstorm was said to have caused the mortality. There may, or may not, have been severe hail with this thunderstorm, but eels at all events would not poke their noses out of the water to be battered to death. Will some one kindly tell us how the thunderstorm managed to kill the jack, and how it killed the eels, or what was the true cause? Do epidemics attack fish? Does disease kill off one kind of fish in a piece of water and leave other kinds exempt? In the pond with the dead eels the other fish were alive. This opens out an interesting field for enquiry.
August, 1903. EDMUND THOS. DAUBENY.

47. Scarcity of Butterflies.—The present queer season has been a bad one for butterflies. I have only seen a single specimen each of the Brimstone and the Orange Tip. Even that ubiquitous species the Small Tortoiseshell has been very scarce. At most I have seen but three or four specimens, and its gregarious, nettle-loving larva not at all. The big Fritillaries, which in a normal season are the glory of a neighbouring wood, were rarely visible.

Fyfield, near Abingdon. W. H. WARNER.

48. White Cockroach.—The insect mentioned on p. 195 was no doubt a specimen which had lately shed its skin. W. F. KIRBY.

49. A Thread-Spinning Slug.—That slugs spin threads has long been known to me. On August 20 last, however, I could not help admiring the ingenuity of a small slug, whichs finding itself in a vegetable basket, hanging about six feet from the ground, proceeded to effect its escape by lowering itself spider-fashion. When first discovered it was dangling at the end of a thread, about a yard from the basket. It slowly but eventually reached the ground, and thinking the little creature deserved it, I returned it to the garden. It was the species known as the Field Slug, a shocking depredator, by the way, among field and garden crops.

Fyfield, near Abingdon. W. H. WARNER.

50. The Sap of Trees.—I am much obliged to you for your comments on this interesting and difficult subject. I have heard of a rather curious illustration of the kindred subject of capillary attraction, though I cannot speak from personal knowledge on the point. I am told that if the freshly-cut stalk of a snowdrop be plunged in ink, the ink will rise up the stalk and blacken the petals; also that by a similar process the perianth of a daffodil has been turned red.

F. M. MILLARD.

[Daffodils so dyed have, alas, been sold on a considerable scale in London during the last two seasons under such names as "Farnborough Beauty," "Enfield Wonder," &c.—ED. *N. N.*]

51. The Great Bindweed.—I suppose we all admire this beautiful white flower in the hedges, however little we may like to see it in our gardens. When it twines round a stiff stem, as of whitethorn, or even a stout stem of grass, it is worth bringing indoors by cutting the supporting stem. If it has young buds on it, by putting it in water one may have a succession of blooms for some days. The stiff support holds it up and greatly contributes to the effect.

Otham, Maidstone. F. M. MILLARD.

52. Beech Disease.—In the September number of NATURE NOTES the Rev. E. T. Daubeny asks if there can be any other reason than drought for the death of the beech trees about Thetford. Can it be that these trees are infested with *Cryptococcus fagi*, an insect which has the appearance of the well-known "American Blight" or "Woolly Aphis," only too common on apple trees?

I recently read in the *Journal of the Royal Horticultural Society* that owing to the ravages of this pest, fears were entertained that "the beech is doomed all over the country, and that the next generation will only know by pictures and reports how gloriously beautiful our forest beeches have been." This, indeed, would be a most sad ending to the trees that Gilbert White describes as "the most lovely of all forest trees!"

The insect attaches itself on the bark and increases so rapidly that large spreading patches are soon observable, giving the trunk the appearance of having been whitewashed. The injury thus done causes the bark to eventually peel off. It would be interesting to hear if the trees Mr. Daubeny refers to are so affected, and whether this is a solution of his question.

Mr. R. Newstead, F.E.S., Curator of the Grosvenor Museum, Chester, says it is very abundant in Cheshire, and I have observed it as very prevalent in various parts of Yorkshire and Lancashire, and am afraid it is widely spread all over the country. He describes the insect in the above-mentioned journal, vol. xxiii., p. 249, and suggests, where practicable, hard scrubbing with sfot soap and water.

Crooke Aldersey, Chester. G. B. MILNE-REDHEAD.

September 4, 1903.

NATURAL HISTORY QUERIES.

7. Stoat and Moles.—Some of your readers may be interested in a roadside discovery I recently made between Corfe and Studland. At the edge of a moorland road and partly covered by bracken were the remains of five moles and a fine stoat, lying in an irregular line. Three of the moles had evidently been sucked by the stoat, while the last two lay facing the enemy, but apparently unharmed. The stoat itself showed no sign of conflict, but lay curled upon its side. Can any of your readers explain this incident?

Chine Hall, Boscombe, August 20, 1903. HERBERT T. GEORGE.

8. Rats.—On my premises twelve young rats have been found in a single nest. Is not this an unusually large litter? I have come across eight or even ten in a family, but never so many as twelve till now.

August, 1903. EDMUND THOS. DAUBENY.

SELBORNE SOCIETY NOTICES.

Council Meetings.—July 22.—The Council considered and agreed to a suggestion that it should keep a record of Selbornian photographs so that all interested in the objects of the Society might be able to keep in touch with the work done by photographers, amateur and professional. The Council also determined to institute inquiries as to the erection, by various bodies, of memorial tablets to prominent Selbornian naturalists and writers, and further agreed to institute inquiries regarding the extermination of the badger.

August 26.—Attention was drawn to the wanton destruction of sea birds by the Channel Fleet on the Island of Achill; also to the present fashion of decorating ladies' hats with robins, bullfinches, &c., and lady members are requested to note the birds so employed by milliners.

The usual monthly meeting of the Council will be held at 20, Hanover Square, W., on Monday, October 26 (not third Wednesday as formerly), at 5.30 p.m.; and the Publications Committee on the second Tuesday, October 13.

New Member.—James Troubridge Critchell, Esq., East Sheen.

Subscriptions.—The Council beg to acknowledge the following subscriptions over 5s.: The Right Hon. Lord Avebury, F.R.S., &c., 21s.; Col. Samuel B. Bevington, J.P., 21s.; Miss A. E. F. Barlow, 10s.

FIELD CLUB RAMBLES.

August 15.—Pinner to Northwood. Notwithstanding the prevalence of holidays just at this time there was a fair attendance for the walk, which was under the guidance of Mr. C. M. Hailes. Though the weather outlook was unfavourable the Selbornians escaped with a dry skin. If the breeze was at times rather high, still it was soft and refreshing, and the distance, some five or six miles, was covered without inconvenience or fatigue. The way lay across the meadows to Eastcote, and there would probably have been more botanical specimens to note had not many of the hedges been recently clipped and the ditches cleaned, so that in places but little tangle was left for examination. It was curious to notice how the wind blew up the undersides of the leaves and so seemed to change the tint of the foliage. In one pasture there was a quantity of wood betony which engaged attention. The path through the wood abutting on Ruislip was very damp in spots and consequently had for the most part to be traversed in single file. About the brook *Scutellaria* grew freely, while *Lysimachia nemorum*, *Polygonum Hydropiper*, and *Erythæa Centaurium* were also found. One feature of the ramble was the sharp difference between the closeness of the large wood and the open space of Ruislip Common. On the latter wild thyme and ling flowered well, and large stretches of the adjacent lake were covered with the rosy pink blooms of *Polygonum amphibium*.

August 29.—About a dozen Members of the Field Club met at Bickley Station, and under the able guidance of Mr. A. B. Wilkinson enjoyed a most delightful ramble round Chislehurst, the weather being all that could be desired. The guide led the way through shady lanes made beautiful by overhanging trees, and by field and footpath, calling attention at many points to the varied views

of wood and coppice, hill and dale. The botanists among the party used their opportunity not merely to admire, but to linger and collect fresh specimens, such as the beautiful black bryony with its graceful trails of glistening berries, and also to cut a few twigs from the young oak trees, whose foliage was just changing and putting on the mellow tints of autumn. After about three miles had been traversed a welcome tea was provided, and then a quiet stroll towards the station in the cool of the evening brought the party to Bickley Church as the clock was chiming eight. Everyone agreed that the ramble had been a most charming one, though it is feared that some of the party found the pace of the botanists somewhat too slow for them.

September 5.—The weather was somewhat unpromising, and only five members assembled at Chipstead Station. The path taken led the ramblers over some beautiful country to the pretty little village of Woodmansterne, where, at the "Woodman," tea in the open air was provided. From the Banstead road fine views were observed, St. Paul's Cathedral and the Great Wheel being well picked out in the distance. The return journey led through fields and lanes to Purley. Among the objects of interest were fields of lavender and peppermint, and some fine specimens of the Turkey oak with its bristly acorn-cups. The white-beam was noticed to be in berry; *Linaria minor*, *Linaria vulgaris*. *Tragopogon pratensis* and *Solidago virgaurea* were among the botanical specimens taken.

FORTHCOMING RAMBLE.

Arrangements have been made for Selbornians to join the Essex Field Club in their annual Fungus Foray; as, however, the date is not yet fixed, Members wishing to take part must send a stamped addressed envelope *at once* to Mrs. Percy Myles, 7, Lincoln Street, S.W. Tea and expenses 2s. 6d. each

The proposed visit to Waltham Abbey is postponed till March or April.

ANSWERS TO CORRESPONDENTS.

F. E. Martin.—Not a *Campanula*, but *Hieracium boreale*.

E. A. Hurst.—*Hypopitys Monotropa*, the Bird's-nest, rare, but already recorded for that division of Gloucestershire.

Donald Matthews.—The Artichoke Gall, the work of the hymenopterous *Aphilothrix gemmæ*.

B. S.—(1) *Ambrosia trifida*. (2) *Atriplex patula augustifolia*.

LETTERS RECEIVED.

Dr. A. Malaher, G. Stanton, F. Primrose Stevenson, George Pernet, G. B. R., W. F. Kirby, A. H. Duvall, E. A. Martin.

NOTICES TO CORRESPONDENTS.

1. All communications for NATURE NOTES must be authenticated with name and address, not necessarily for publication.

2. The return of an unaccepted contribution can only be guaranteed when it is accompanied by a stamped and addressed envelope. We cannot undertake to name specimens privately, to return them, or to reply to questions by letter.

3. All communications for any number must be in the Editor's hands by the 10th of the preceding month.

4. Communications for NATURE NOTES, books for review, specimens for naming, &c., should be addressed to the Editor, PROFESSOR BOULGER, F.L.S., F.G.S., 11, Onslow Road, Richmond, Surrey.

5. For the supply of the Magazine to others than members, or for back numbers (except in the case of new members), address the publishers, with stamps at the rate of 2½d. per number, Messrs. JOHN BALE, SONS AND DANIELSSON, Ltd., 83-89, Great Titchfield Street, London, W.

6. Letters connected with the business of the Society, subscriptions, &c., should be addressed to the local Secretary, or the Secretary to the Society, Mr. R. MARSHMAN WATTSON, 20, Hanover Square, W.

Nature Notes:

The Selborne Society's Magazine.

No. 167. NOVEMBER, 1903. Vol. XIV.

OBJECTS OF THE SOCIETY.

To preserve from unnecessary destruction such wild birds, animals and plants as are harmless, beautiful, or rare. To discourage the wearing and use for ornament of birds and their plumage, except when the birds are killed for food or reared for their plumage. To protect places and objects of antiquarian interest or natural beauty from ill-treatment or destruction. To promote the study of natural history.

SELBORNIANA.

Damage by Gale at Selborne.—We are sorry to learn, from the following extract from a letter, the irreparable damage done by the gale of September 10 at the Wakes:—

"I have just seen a friend of Mr. Pears who has been staying some days with him at the Wakes. He says that the oak tree and the ash tree planted by Gilbert White in 1731 in his orchard have been very much damaged by the hurricane of wind that we had [September 10]. The ash is irretrievably destroyed and will have to be removed, but the oak by topping may be preserved. Several other trees are injured, but the beautiful wych elm is not much hurt."

Gilbert White, writing to Marsham in 1790, says: "In a humble way I have been an early planter myself. The time of planting, and growth of my trees are as follows: Oak in 1731, 4 ft. 5 in.; ash in 1731, 4 ft. 6½ in.; spruce fir in 1751, 5 ft. 0 in." In his "Naturalist's Journal" he gives the position of these trees: "Oak by alcove, ash by ditto, great fir, Baker's Hill."—"Life and Letters," vol. ii., p. 223. White was but eleven years old at the first date to which he here refers.

An Appeal to the Humane.—Lovers of animals will learn with regret that Edith Carrington, for many years their champion

and friend, is now laid by in poor circumstances and bad health, the latter certified by her medical man to be the result of "too hard and too prolonged mental labour." Miss Cobbe, the veteran leader of the Mercy cause, assisted by Miss B. K. Oakes, is raising a fund for the purchase of an annuity, as an acknowledgment of Miss Carrington's services in the past and for her relief in the future. Contributions will be gratefully received and acknowledged by Miss Oakes, 6, Colville Houses, Talbot Road, Notting Hill, London, W.

Feather Pompons and Trimmings.—The following letter was recently addressed to the Society, and as it opened up a subject of interest it was passed on to Mr. Hedger Wallace for his opinion on the points raised. We give below both Miss B——'s letter in question and Mr. Hedger Wallace's memorandum:—

Miss B——'s Letter.

"Having recently read a reprint of an article on 'Ospreys,' published by the Selborne Society, from which I learn that even the common 'brush ospreys' are generally taken from the same bird as the more expensive ones, or from birds which are killed solely for purposes of decoration, I should be very glad if you could tell me whether there are any other kinds of feather trimmings which one should avoid buying. I am particularly anxious to know about feather 'pompons' as they are a favourite hat trimming in my family. One would wish only to buy such trimmings as are made from the feathers of birds that are used for food, and I should be glad to know whether there is any means of distinguishing such."

Mr. Hedger Wallace's Memorandum.

"I have made inquiries and find that those who are the wholesale buyers of bird-skins and feathers would like to see feather pompons done away with. The reason is simple, for pompons represent the utilisation of waste products, being made mainly from the trimmings of ostrich plumes, though sometimes they are made of cocks' feathers and a few other feathers. Generally, however, pompons are made up of the waste bits and trimmings which are taken off the natural ostrich feathers as imported, in the process of bleaching, curling, &c., to which they are subjected before they become the ostrich plumes of the shops. Of course, those who deal in plumes hope that if pompons were discarded the wearers would replace them with plumes and so extend the sale of ostrich and other feathers.

"As regards brush ospreys, these are generally the quill ends of the plumes of the large white egret. The plumes are often 17 in. to 18 in. long, and are cut either into halves or into three, and excepting the top length, they go to make brush ospreys. The 'fish tail' ospreys come from the intermediate egret, and the small, beautifully curved plumes from the little egret.

"It is difficult to say what feather trimmings ladies should avoid. A knowledge of the Natural History of birds, plus a little common sense, is really the safest guide. The feathers of birds that are used for food, that are reared for their plumage,

and of birds that are easily domesticated can, for instance, be used without any doubt. Again, from the sentimental point of view the feathers of birds that are songsters should be avoided; and from the economic point of view, while the feathers of insectivorous birds should be debarred, the feathers of graminivorous and frugivorous birds might be used."

MURDEROUS MILLINERY.—The Press can, one is thankful to know, always be reckoned upon as supporting any rational effort of humanitarianism. The *Glasgow Evening News* and other papers have commented favourably upon the steps taken by the Council with reference to the fashions of the present season. The following is the language of the *Daily Mail* of October 12:—

"NOTABLE ACTION BY THE SELBORNE SOCIETY.

"Bird-lovers will be glad to learn that the Selborne Society has issued an appeal to a number of expert ornithologists, requesting them to furnish reports to the Society as to the species of birds now exhibited in milliners' windows for the decoration of women's hats.

"As a result, it is to be hoped that the ruthlessness of the slaughter which is caused by this traffic will be brought home to those directly concerned.

"We learn from a correspondent who is taking a prominent part in this inquiry that the number of different species now to be seen in the London shops is greater than ever. The ranks of the graceful little sea-swallows and gulls have been heavily taxed. The black-headed gull, which has become such a popular favourite at the bridges along the Thames during the winter months, is also especially prominent, whole birds in summer dress being by no means rare.

"Probably, when the various reports arrive, over two hundred different kinds of birds will be found to figure therein. Among the more striking birds used for millinery decoration to-day are various species of humming birds, birds of Paradise and sun birds, kingfishers, egrets, herons, pigeons, owls, swallows, titmice and parrots.

"By way of adding insult to injury, these are often dyed the most hideous colours, and are thrust into shapes that suggest death by torture on the rack.

"Perhaps one of the most offensive exhibitions of this kind yet devised was that of a pair of love-birds skewered together, and supporting a double train of a foot or more in length, made up of the wings of others of the same species. As many as twenty pairs of wings were used for this purpose. Fancy two-and-twenty victims displayed on one hat! After this, who shall call the Bornean head-hunter a savage?

"Besides whole birds there will be found scores of nondescripts, such as the body of a thrush or skylark, with a pair of terns' wings, and the head and wings of the beautiful white egret, dyed green, fitted to the tail of a gull. Tufts of egret plumes and the side plumes of the bird of Paradise are as much seen as ever, though the cruelty entailed in their collection has been again and again proclaimed from the house-tops.

"The present action of the Selborne Society has been prompted by the announcement in the *Drapers' Record* that the birds used for millinery are not real, but are 'manufactured' by gluing duck and pigeon feathers over a lump of cotton-wool. This is merely trifling with the real facts."

THE PRACTICAL ACTION TAKEN BY AUDUBON SOCIETIES IN AMERICA TO AFFORD PROTECTION TO BIRDS.—Mr. T. S. Palmer, of the U.S. Department of Agriculture, Biological Survey, the official in charge of game preservation, writing recently to a member of the Selborne Society, points out that an important step toward bird protection in the United States

"has been taken this year by an agreement entered into between the Millinery Merchants' Protective Association of New York and several of the State Audubon Societies. This agreement, which is to remain in effect for the next three years, reads in part as follows:—

"*Agreement between the Members of the Millinery Merchants' Protective Association of New York and the Audubon Society of the State of New York.*

"The members of the Millinery Merchants' Protective Association hereby pledge themselves as follows:—

"To abstain from the importation, manufacture, purchase, or sale of gulls, terns, grebes, humming birds and song-birds.

* * * * *

"IT IS FURTHER AGREED on the part of the Millinery Merchants' Protective Association that on and after January 1, 1904, the importation, manufacture, purchase or sale of the plumage of egrets or herons of any species and of American pelicans shall cease, and the said birds shall be added to the list of prohibited species mentioned above.

"IT IS UNDERSTOOD AND AGREED that the restrictions referred to in this agreement as to gulls, terns, grebes, herons, and humming birds, shall apply to the said birds irrespective of the country in which they may have been killed or captured."

The above extract will, we are sure, be read with interest by all Selbornians, while the American Audubon Societies are to be congratulated on being able to get the trade organisation to meet them on a common platform.

THE PROTECTION OF THE FAUNA AND FLORA OF AUSTRALASIA.—The attention of the Council having been directed to an advertisement of an Australian dealer in animals, enquiries were made of the Agents-General of the respective colonies.

In reply, the Acting Agent-General for New South Wales forwarded copies of Act No. 26, 1901, and of pamphlets on the fauna and timber resources of that colony. The Act imposes a close time for quail from October 1 to March 31, and for numerous other scheduled species of wild Australian and foreign birds, from August 1 to January 31, under a penalty of five pounds for killing, selling or having such bird, or ten shillings for an egg, half the penalty going to the informer and half to the Zoological Society. The schedule can be modified by the Colonial Secretary; but we do not see the wholesome clause that bird or egg shall be forfeit.

In his pamphlet on "The Timber Resources of New South Wales," Mr. J. A. Coghlan, the Government Statistician, writes:—

"Pioneers, whether settlers or timber-getters, cut down indiscriminately, giving no thought to anything but their immediate requirements. The necessity of preserving the timber resources of the colony, by preventing the ruthless destruction of the best species of brush and hardwood which was being carried on, principally

in the Clarence River district and in the eucalyptus forests on the Murray, led the Government, in 1871, to establish throughout the country a certain number of Forest Reserves in which permission to cut timber should be granted upon payment of a fixed fee. It soon became apparent that stringent regulations alone could put a stop to the reckless operations of the licensed timber-getters; but it was not until September, 1878, that such regulations were issued. These appeared not a day too soon, as the best species of cedar, which abounded in the Clarence River districts, had been exploited to such a wasteful extent that the supply of this magnificent timber threatened to give out. Cutting down indiscriminately trees of all sizes, and clearing the lower lands of their best timber, the cedar-cutters, after disposing of all that could be cheaply transported, or easily floated down the rivers in time of flood, left a considerable surplus of felled timber to lie and rot on the ground. Then they travelled farther north, to carry on the same depredations along the rivers of the neighbouring colony of Queensland. The same system had been pursued in the gum forests of the Murray. Considerable quantities of excellent timber were destroyed in the forest reserves of that part of the colony, to the detriment of the district, which was deprived of its natural wealth, and to the injury of the colony at large, which suffered the loss of much of its best timber without receiving an equivalent in revenue."

The Acting Agent-General also states that the question of introducing a measure for the protection of the fauna (including kangaroos, emus and opossums) is under consideration.

In Queensland, Native Birds Protection Acts were passed in 1877 and 1884.

The Acting Agent-General for Victoria replies that there has been no legislation dealing with the flora of that colony. By the Game Acts of 1890 and 1896, the platypus, lyre birds, bee-eaters and other birds are protected all the year round, and many other scheduled species from August 1 to December 20, the Governor having power to modify the schedule. Swivel or punt guns are prohibited, and the game unlawfully killed is forfeit. Half the penalty goes to the prosecutor; but the Aborigines are exempted from the Acts.

The Agent-General for Western Australia replies that some of the indigenous birds of the North-west District are protected by heavy penalties during their breeding season, and that the Governor is empowered to declare reserves within which specified plants or animals may be protected.

The Agent-General for South Australia replies that there are in that colony very stringent laws for the preservation of the indigenous fauna.

The Agent-General for Tasmania replies that laws have been in existence for many years in that colony protecting the indigenous fauna. These laws not merely regulate the close seasons for native game such as kangaroo, wild ducks, quail, bronzed winged pigeon, &c., but they also absolutely prohibit the killing or destroying the eggs of numerous varieties of songsters and other birds, including kingfishers, skylarks, swallows, moreporks, owls, cuckoos, &c., sixty to seventy species in all. There does not appear to be any legislation protective of the flora, which the Agent-General regrets, though pointing out the difficulty of enforcing such laws in a new country. He adds that the trend of public opinion is decidedly in favour of protective legislation.

Protection of Animals in the Federated Malay States.—The Colonial Office, in reply to the enquiries of the Council, have furnished particulars as to recent legislation in Selangor, Negri Sembilan, Perak and Pahang. It is unlawful to kill any female elephant, under a penalty of five hundred dollars; to kill male elephants, bison, rhinoceros, or tapir without a licence, under the same penalty; to shoot any animal in any reserve proclaimed by the Sultan, under the same penalty; to shoot any deer in May, June, July, or August, under a penalty of one hundred dollars; or to shoot any birds in a schedule including over thirty species, among which are pea-fowl, jungle-fowl, pheasants, quail, pigeons and parrots, between February and May, under a penalty of five dollars. The head, carcase, feet, skin, tusks, horns, or plumage of animals unlawfully killed are liable to forfeiture, and the informer may be awarded half the penalty. The Resident is empowered to vary the schedules.

Collecting.—In the September number of *The Entomologist* Mr. A. J. Lawrence complains of the results of the operations of the "dealer," and then goes on to enumerate his own captures, including thirty specimens of *Hyria muricata* (*auroraria*), and five, out of seven seen, of *Argynnis paphia*, var. *valesina*. How does such collecting differ as regards the danger of the extermination of our rarer Lepidoptera from that of the much-abused "dealer"?

The Cottages in Henley Street, Stratford-on-Avon.—The trustees of Shakespere's birthplace have decided to preserve and restore the two cottages adjoining the garden of the birthplace. As it was originally intended to demolish them, the action of many members of the Selborne Society in joining in Miss Marie Corelli's demand for delay and reconsideration of the subject has been fully justified.

Scheme for Recording Ancient Defensive Earthworks.—At the Congress of Archæological Societies held on July. 10, 1901, a Committee was appointed to prepare a scheme for a systematic record of ancient defensive earthworks and fortified enclosures. This Committee includes Professors Boyd Dawkins and Wintle, Mr. J. H. Round and Mr. St. John Hope, and has as Honorary Secretary Mr. J. Chalkley Gould, whose address is Royal Societies Club, St. James's Street. They hope to secure the co-operation of County, Borough and District Councils, and of landowners as well as of archæologists in compiling schedules of the various kinds of earthworks, with a view to their preservation. An interesting "Provisional Scheme" issued by the Committee contains twenty plans of typical instances. As such work falls within the objects of the Selborne Society we hope any of our members who are in a position to assist will communicate with Mr. Chalkley Gould.

PHOTOGRAPHY AS THE HANDMAID OF SCIENCE.—During the last month the Royal Photographic Society have been holding their forty-eighth annual exhibition at the New Gallery. The many ways in which photography may assist in the study of Nature were admirably illustrated. Thirty-six prints by Mr. A. C. Banfield, illustrating the life-history of a splash, Sir Norman Lockyer's celebrated spectra, Dr. Vaughan Cornish's marvellous series of cloud and wave effects, and Messrs. Glew and Sanger Shepherd's views of lightning flashes, represented physics and meteorology: Dr. George Abbott's Magnesian Limestone concretions, and a beautiful photomicrograph of Nummulitic limestone by Mr. T. E. Freshwater, were of interest to the geologist: studies of single plants, by Mr. Henry Troth of Philadelphia, among which we specially noticed wild carrot, pansy, hare-bell and *Kalmia;* chrysanthemums by Miss M. C. Eames, daffodils by Mr. L. A. Edmonds, a spray of roses entitled "A Broken Limb," exhibited by the Autotype Co.; and last but not least a representative series from Kew including views of *Amorphophallus Titanum* in flower, the three-mile trench of *Victoria regia* in British Guiana and a group of the remarkable fungus *Clathrus cibarius* in New Zealand, furnished an instructive treat for the botanist; whilst Mr. Douglas English's beautiful studies of British *Muridæ* and Mr. W. M. Martin's series of forty radiographs illustrating the development of the frog were equally interesting to the zoologist. Messrs. E. and H. Spitta's set of microphotographs of test objects, and the many excellent series of lantern-slides exhibited by Messrs. Newton and Co., were of even greater practical interest to the teacher, whilst beautiful landscapes and architectural studies too numerous to specify came also within the scope of our Society. Mention must also be made of a view of Mont Blanc, taken at a distance of 70 kilometres with a Dallmeyer telephoto lens as an example of results unattainable by any other method.

VIVISECTION.—A discussion, which promises to be of more than usual interest, will take place on November 12, at Essex Hall, Strand, W.C., when Mr. Edward Carpenter will give an address on "Vivisection." Those who have never heard Mr. Carpenter should not miss this opportunity of doing so, as he does not often lecture in London. Those who have heard him will be glad of another chance. The other speakers will include Mr. R. B. Cunninghame Graham, Mr. John M. Robertson, Mr. George Greenwood, Mr. Henry S. Salt, and Mr. Ernest Bell. The proceedings will commence at 8 p.m. Admission free.

THE HOME COUNTIES NATURE-STUDY EXHIBITION.—Before this number is in our readers' hands this Exhibition will have begun. It is to be opened by our President on the afternoon of October 30. We hope to give a full account of it in our next number, but we mention it here because it will be open on

Monday and Tuesday, November 2 and 3, from 11 a.m. to 9 p.m., admission 1s. On Monday evening, at 5 p.m., Mr. Oliver G. Pike will lecture on "Pictures from Birdland," and on Tuesday, at 5 p.m., Mr. R. B. Lodge will lecture on "Some Suburban Birds and Beasts," and, at a meeting of our Society, the Editor will speak on "The Study of Living Plants," and Mr. Edward A. Martin on "Open Spaces and Green Fields." The Exhibition is held in the Offices of the Civil Service Commission, Burlington Gardens, New Bond Street.

REVIEWS AND EXCHANGES.

The Book of the Cat. By Frances Simpson. With 12 coloured plates and numerous illustrations in the text. Cassell and Co. Price 15s. net.

That most self-sufficient of our domestic tyrants can have little to complain of in this sumptuous monograph which Miss Simpson has dutifully devoted to the glorification of his or her race. Nothing that printing or illustration can do has been spared. There is a coloured frontispiece by Madame Ronner—*facile princeps* among delineators of the cat—and several uncoloured illustrations also by her: there is a chapter on cat-mummies and cats of the past, in which appears Sir John Tenniel's picture of Alice and the Cheshire Cat; and there are chapters on the anatomy, the distribution and the diseases of cats. It is not a treatise on comparative anatomy, as was the late Professor Mivart's book "The Cat"; but it is essentially a fancier's book. Every breed is figured and described: feeding, housing, management and breeding are fully discussed; and we cannot see that the cat-lover can want more than is given here. The volume is undoubtedly a cheap one.

The Geological Structure of Monzoni and Fassa. By Maria M. Ogilvie Gordon, D.Sc., Ph.D. *Transactions of the Edinburgh Geological Society*, vol. viii., Special Part. Price 6s.

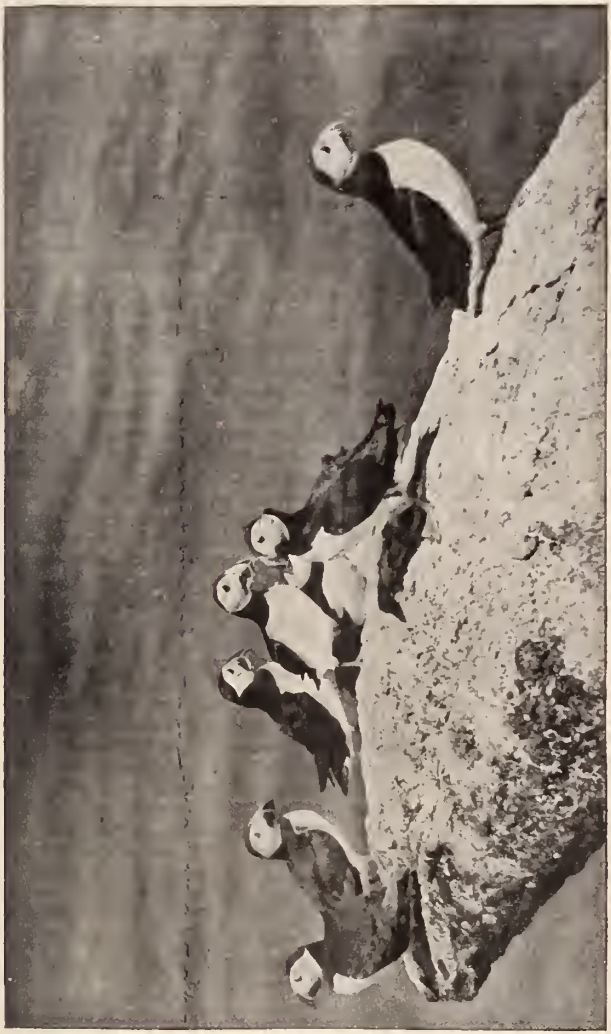
We do not think we can recall any piece of scientific work by a woman quite capable of comparison with this summary of Mrs. Ogilvie Gordon's ten years' labours in the Dolomites of the Southern Tyrol. Her detailed mapping of a large and complex region of Permian and Triassic rocks with their associated igneous series is here represented by a fine coloured map, twelve sections, of which eight are also coloured, and fourteen beautiful photographs, whilst the memoir itself, almost entirely stratigraphical, runs to 179 pages. The price charged for it is certainly not excessive, and we can only hope that it will not suffer in repute by being issued by a society less well known than those of London. Mrs. Ogilvie Gordon's interpretation of the area in question is somewhat revolutionary; but she has the evidence in support of her view that no one else has ever collected.

Bird Notes and News, No. 3, October, 1903.

We are glad to see from this number, which has now reached eight pages, that our sister society is working with all its accustomed energy in many directions. The Pole-trap Bill, Bird-Protection in Egypt and India, Winter Millinery, and Egg-collecting by Schoolboys are among the subjects with which this issue deals.

The Bird Book. By A. J. R. Roberts. John Lane. Price 3s. net.

Coming, as it does, from the Bodley Head, we know beforehand that this little pocket volume will be daintily produced, whilst our readers, recognising in its author one of the ornithological contributors to our

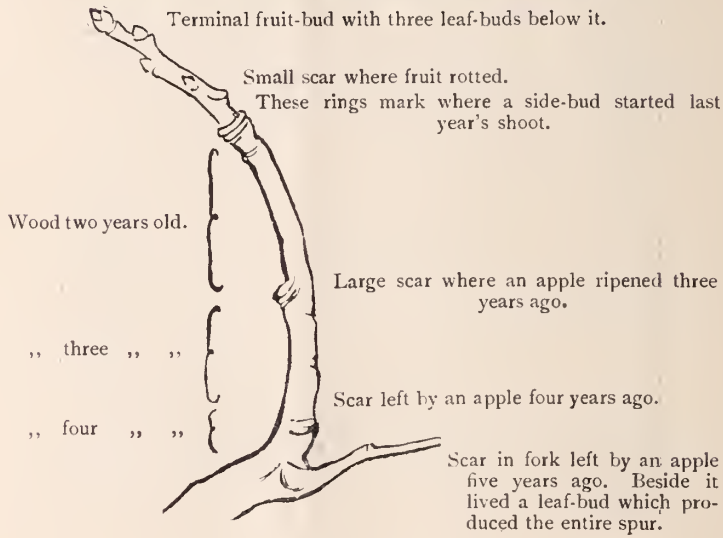


A Group of Puffins.
(From "The Bird Book," by A. J. R. Roberts, by kind permission of John Lane, Esq.)

Natural History Notes, will know that the matter is likely to be as good as the make-up. Though we have many bird books nowadays, we have none too many of this class. As one of a series of practical country hand-books, its object is to enable its possessor to recognise some at least of the common birds of the country-side. Upwards of a hundred species

are described, grouped according to their habitats, and a complete list of British birds, with their lengths in inches and an indication of whether they are residents, winter or summer visitors, is added. We could have wished that here at least scientific names had been added. Twenty-four excellent illustrations, from photographs, half of which are by the author, add to the attractiveness of the volume. One of these we are able, by the courtesy of the publisher, to reproduce here.

Observation Lessons on Plant Life. A Guide to the Teacher. A Two Years' Course of Nature Study. By Mrs. Beverley Ussher and Dorothy Jebb. Illustrated by Blackboard Sketches and by Floral Designs. The latter to serve as hints for the treatment of Plant Forms in conventional Art. O. Newmann and Co.


Terminal fruit-bud with three leaf-buds below it.
Small scar where fruit rotted.
These rings mark where a side-bud started last year's shoot.
Wood two years old.
Large scar where an apple ripened three years ago.
,, three ,, ,,
Scar left by an apple four years ago.
,, four ,, ,,
Scar in fork left by an apple five years ago. Beside it lived a leaf-bud which produced the entire spur.

History of an Apple Spur.

Teachers, especially in rural schools, will find this a most suggestively useful book. It aims at combining Nature-Study with the teaching of Design. With all due respect for the name of Ruskin their inventor, we cannot help thinking the cut-paper modelling a waste of time and

trouble. The outline sketches for blackboard reproduction, two of which, by the courtesy of Messrs. Newmann, we are able to give here, are excellent, whilst we do not doubt that the conventionalised studies will also serve their purpose. There are points in the text which would be the better for reconsideration before a new edition appears, such as calling monocotyledons "inside-growers," a translation of an obsolete error, and the application of the term "haw" to the bedeguar of the rose.

Flora of the Island of Jersey. By L. V. Lester-Garland, M.A., F.L.S., Principal of Victoria College, Jersey. West, Newmann and Co. Price 6s.

This is in many respects an excellent accomplishment of a much needed piece of work. Babington's "Primitiæ Floræ Sarnicæ," published in 1839, was the hurried work of his youth, and contains many serious errors, so that a companion to Mr. Marquand's recently published "Flora of Guernsey" was certainly due. In an area of only forty-five square miles the number of flowering plants, ferns and *Characeæ* to be enumerated is not large, nor is any subdivision of the area necessary. Mr. Lester-Garland gives us a fully adequate description of the island, its climate, and its present condition, illustrated by a most excellent map on the scale of two inches to the mile. He also gives us comparative lists of the Flora of the other islands of the group, from which it appears that, out of a total of 696 species in the Channel Islands, Jersey has 649, of which 81 are peculiar to it. Unfortunately the author has to enumerate seventeen species which have almost certainly disappeared from Jersey, and twelve from Guernsey, mainly as the result of drainage. Engler's system of classification is adopted, which makes the book somewhat difficult to use or to compare with our other local floras, whilst the nomenclature is not open to the same charge of new-fangledness.

The Humane Review for October contains, *inter alia*, articles on Thoreau and on the war against the sparrow.

The Victorian Naturalist for August has some important notes on eels, dealing with the local species.

The Animal's Friend, vol. ix. Edited by Ernest Bell. Price 2s. 6d. The annual volume of our pleasingly written and illustrated contemporary will make an excellent gift-book for the young.

Received: *Leicester Corporation Museum and Art Gallery: Thirteenth Report*, 1890-1902; *Report and Transactions of the Ealing Natural Science and Microscopical Society*, 1902-3; *First Annual Report of the Horniman Museum*, 1901-2; *Board of Agriculture Leaflet*, No. 93: *Farmyard Manure*; *The Irish Naturalist*, *The Animals' Friend*, *Our Animal Friends*, *The Animal World*, *The Humanitarian*, *The Agricultural Economist*, and *The Commonwealth* for October; *The Indian Textile*, *Mechanical and Electrical News* for September.

NATURAL HISTORY NOTES.

53. Is Nature Cruel?—In his criticism of my article bearing the above title, Mr. Price says that the lower animals are so preyed upon by their enemies that their bodies could not stand the strain without special help from Dame Nature to alleviate their labours. Is he sure that there is not an equal or even greater strain put upon the human race, which is also subject to the many anxieties and vicissitudes of life?

Mr. Price tells us that the "instinct of self-preservation was probably taught the worm in his childhood by his parents," and that as "this teaching is always resorted to by the higher forms of animals, namely, to obey their parents and to

get away from danger," he does not see why it "should not extend to the worm as well." But he also confesses that "this theory needs more proof." I should think it does. I am prepared to go as far as most people in the belief that many of the lower creatures receive instruction from their parents; but one must draw the line sometimes, and wherever it may really be, I draw it at worms. Worms are hermaphrodites. Their parental duties cease with the laying of their eggs. They do not indulge in nurseries, and the young shift for themselves. One cannot imagine a bisexual worm getting a lot of little ones together and giving them a lecture on the dangers of life. It is almost as incredible as in the case of those insects which invariably die before their young are hatched. It will not do.

Mr. Price thinks that a rabbit does not mind being hunted and "is not frightened" by a dog as long as it has a bush to hide in or a hole to run to, and when in the dog's fangs "does not necessarily feel pain." Can he picture to himself the feelings of a rabbit pursued by a stoat? It is so paralysed by fear as to be almost incapable of exerting itself to escape. What are the sensations of hunted animals, especially of such timid ones as hares or deer? As the chase proceeds their terror increases, their heart beats faster and faster, and their bodily powers gradually fail. The last stage of being dragged down and torn to pieces is the least painful of all. My article says cruelty is the "pitiless infliction of pain, whether of mind or body." Which is the worst? In a life much exceeding half a century I have learned that mental pain is the harder of the two to bear. So it is with the hunted stag, or the poor little bird that I have in some instances seen swooped on twenty times before the hawk's fatal grip.

A few days ago a house-martin came down the chimney into my bed-room. I caught it, and disitnctly felt its heart beating in my hand from fear. On being liberated it gave a cry of joy and joined its fellows. This bird conveyed to me its sensations of terror and joy almost as plainly as if it had described them in my own tongue.

There is little doubt in my mind that all creatures "exult in their existence and are glad to live," and that throughout the different forms of sentient life happiness and joy far exceed misery and pain; and it seems to me that the cares to which the lower animals are exposed are more like the cares of our childhood than of our mature age. But Nature has laid down certain laws. She warns all creatures in some way or other of what they are and of the consequences of breaking them. From these laws she never deviates; and those who neglect or cannot keep them always pay the penalty. It is said that "self-preservation is the first law of Nature." This is enforced through the medium of pain and fear. Nature's laws are often cruel, but she is only cruel to be kind.

Market Weston, Thetford, October, 1903. EDMUND THOS. DAUBENY.

54. The Mole.—Last November a paper by Mr. Lionel E. Adams, B.A., entitled "A Contribution to our Knowledge of the Mole (*Talpa europæa*)," was read before the Manchester Literary and Philosophical Society. "Since the time when Aristotle described the mole," writes the author, "no one seems to have studied its habits till Le Court set up as a scientific mole-catcher in France about 1798. He imparted his knowledge to Cadet de Vaux, who in 1803 published the information thus gained in a small work entitled "De la Taupe, de ses mœurs, de ses habitudes, et des moyens de la détruire.' . . . Geoffroy Saint-Hilaire . . . copied most of Cadet de Vaux's work, especially the imaginative parts, which have been copied and handed down by every subsequent writer. But Saint-Hilaire also published the results of his anatomical studies of the mole, and these form the most important and interesting portions of his work." Mr. Adams, during four years' work in the neighbourhood of Stafford, has dug through some 300 moles' fortresses, no two of which did he find exactly alike; and has made plans of 100, many of which are reproduced in his paper. Many popular delusions crumble before the test of inquiry. St. Hilaire, for example, asserts that "la course d'une taupe pouvait égaler à peu près en vitesse la marche d'un cheval dans son trot le plus rapide"; but Mr. Adams has never found the pace to exceed 2½ miles an hour. In the July number of *Pearson's Magazine*, Mr. Marcus Woodward gave a popular "Life-story of the Mole," which elicited a most original observation by Mr. Alexander Runciman, of Portobello, as to the

mole's manner of eating earthworms, which Mr. Woodward published in the *Daily Express* for July 27. Mr. Runciman describes the mole as first biting a small piece off the tail of the worm, and then turning the worm round and cramming it into its mouth head first, so that the earth with which the body of the worm is filled is squirted out. Our country members might well devote some observation to the mole, its fortresses and its habits.

55. **Singing Mice.**—In the *Daily Express* for August 4, Dr. Louis Elkind gave a popular *résumé* of what has been observed as to the vocal powers of mice. They are said to sing most after dark and before a change of weather, to have a compass of two octaves, and notes compared to those of the canary, the thrush, the quail, the clucking of a hen, the base hoarse voice of the frog, and the nightingale! They are also said to enjoy the violin or violoncello, but not the cornet! Musical members who keep no cats may be able to add to our knowledge of what was long ago described as a disease in the vocal organs of a few individual mice.

56. **A Compound Nest.**—Last June I discovered in this garden a compound nest of a blackbird and song-thrush: it was built in a syringa bush, about five feet from the ground and close to a much-frequented path. The structure had evidently been begun by the thrush, as the materials were the same as used by that species, including the mud lining, but on the top of this a cushion of dried grass had been placed, undoubtedly by the blackbird. On June 3 there were seven eggs, three thrush's and five blackbird's. On the ground, a few feet from the nest, lay another thrush's egg, with a hole on each side of it, which seems to point out that it was removed from the nest by the bill, for both holes had jagged edges. The process of hatching was carried on at first alternately, a hen thrush, without a tail, sitting in the morning, and a hen blackbird for the rest of the day. But for some time before the eggs were hatched only the blackbird sat, and I therefore suppose that the thrushes were driven away. In a short time the blackbirds' eggs were hatched, and some of the young birds flew about the beginning of July. I regret to say that one of them died, and on examining the nest after a certain lapse of time the three thrush's eggs were found at the bottom of it. On breaking them they proved to be addled. Of the many thrushes' nests I have watched this year, the eggs were addled in nearly every case.

The Poplars, Pucklechurch, near Bristol. BLANCHE A. CONEY.
October 8, 1903.

57. **Rare Visitors.**—The marsh country, by the eastern Rother, near this village, has recently been visited by several of that rare bird (in this country), *Plegadis falcinellus* (glossy ibis, or black curlew). A group of four have been seen on several occasions lately, but unfortunately the gunner was about and one of the four was shot. A medical friend, Dr. Montgomery, of Beckley, obtained the body and carried out a *post-mortem*. He found, from the undigested food, that the bird had been feeding on the rat-tailed maggot. The specimen, now stuffed, shows a handsome bird, standing over 20 inches in height, with handsome dark brown plumage, showing in some lights a purple hue, and in other lights a dark, glossy metallic green. The beak is more than four inches long and is curved.

The wild bird life of this corner of Sussex is very interesting. Unusually large numbers of wild duck, widgeon, teal and snipe have been seen this season.

The Oast, Beckley, Sussex. FRANK L. BREWER.

58. **Swifts.**—In your September number I notice that a correspondent remarks on the lateness of the swifts in arriving. May I be allowed to point out that they are also unusually late in departing? As a rule they leave us early in August, and last year I noted down August 20 as an exceptionally late date on which to see one. This year, however, all my records have been broken. On August 26 I saw one, three on September 2, one on September 7, and to-day, September 13, I have seen another. In each case the birds passed close to me, so that it was impossible to make a mistake as to their identity, and even at a distance it is not difficult to recognise their long, black, scythe-like wings. I heard, too, less than a week ago, of a pair about two miles from here that were still feeding their young

in their nest. I cannot absolutely vouch for the accuracy of this observation, but my informant was not a person likely to make a mistake.

Bideford, September 13, 1903.

59. **Late Nesting.**—August 14, yellowhammer, four eggs (slightly incubated); September 3, young greenfinches left a nest in our garden; September 9, young yellowhammers in nest (ready to fly); September 9, young whitethroats in nest (about a week old).

Bideford, September 14, 1903.

60. **The Skuas.**—Most readers will be glad to hear that this season has been a favourable one for the great skua, or bonxie; I found fully 200 pairs nesting on the hills on Foula Isle in Shetland, and a great number seemed to have hatched their young in safety. The Richardson's skuas, however, were by no means so fortunate. They nest on the lowlying ground, and the heavy rains at the beginning of July drowned many a young bird. I found some, indeed, which had been drowned before they could leave the shell, for the hollows that had served as nests were transformed into pools, and the water had got in at the hole from which the young birds had tried in vain to get out. The ordinary number of eggs for both the great and Richardson's skua is two, but I was fortunate enough to see one nest of the latter species which contained four eggs—an event of which none of the Foula folk had heard before, so I venture to chronicle it.

61. **Divers.**—The capabilities of the divers on land are still the subject of much dispute. Their legs are placed so far behind in order to give them the utmost ease in swimming that it is doubtful whether it is anatomically possible for them to stand upright. While in the Shetlands I found a pair of black-throated divers nesting on a small island in one of the innumerable lochs. The approach to the nest was over a sloping piece of smooth, bare rock, and I watched one of the birds through a pair of binoculars as it went to its nest. As it was not more than sixty yards from where I lay concealed I had a splendid view, and felt almost certain that the bird straddled up over the rock somewhat after the manner of a duck, except that its neck was stretched awkwardly forward. The body appeared not to touch the ground during the whole process. I could hardly believe my eyes and frightened the bird off to see how it reached the water. This time, however, it slid down on its belly in the orthodox manner. On another island I found a red-throated diver sitting on its eggs. The nest was quite six or eight feet from the water, and being anxious to see how she would reach it I threw some small pebbles towards her (the nest was not thirty yards distant). Again I was surprised, but in a different way. The bird sprang at once into the air, and with a beat or two of the wing lit in the water. This was too shallow to allow the bird to dive, but it submerged itself as far as possible, and remained absolutely motionless for nearly a minute watching me. Then it swam out and dived.

Bideford, September 14, 1903. A. J. R. ROBERTS.

62. **Diving Birds** (pp. 53, 214) I have now before me my brother's former note entitled, "How do they do it?" p. 56, vol. xii., and the questions he has raised being interesting and important, I wish to help further, if I can, towards their solution.

The most difficult part of this matter is where birds slowly sink in the water "without any apparent muscular effort," as I remember seeing them do when at the Zoological Gardens in London some years ago. The birds were, I think, guillemots. One saw a bird asleep on the surface of the water, light as a feather as the saying is, much lighter than water anyhow at that time; and then one saw him dive, or fly or sink under water. The explanation of the first two operations is simple compared with the third. How does a bird sink? If we place a beefsteak in water it sinks. Can it be that a bird can reduce the lightness of his body so that its specific gravity may equal that of raw beef? It is hard to believe this. In the tank in which I saw birds sink, water was being driven in at one end, producing a current, and the birds sank slowly in a very slanting direction. I think they made use of the current. A fish moving in the water, by raising or depressing almost imperceptibly the side fins submerges or elevates his body.

This principle is understood by torpedo and submarine ship inventors, and no doubt by those who have to do with modern airships (formerly styled balloons), which are now being built of a rational shape. I hardly think any bird could sink in absolutely still water: he would have to use wings or feet to get down.

The larger birds, and notably the albatross, going against a strong wind hardly move a muscle, they set their sails and rudder and hold them steady, and can raise or sink themselves by slight movement. The stiffer the gale the more quickly they do it. Look and see. So the bird that moves in the denser medium, water, "without apparent muscular effort" must, so it seems to me, do likewise. Let us remember that in running water the upper layers go much faster than the lower ones, which are retarded by friction, the pace very quickly decreasing, till stillness, or backwater over certain surfaces, is soon attained. Also remember that with wind the same rule holds good, but in a lesser degree, for the friction is less. There are water eddies where man would be sucked down never to rise again. Is it to be supposed that birds who live at least half their time under water in pursuit of food do not avail themselves of eddies, currents and backwaters to assist them, the same as other birds seek help by drifting with the wind or holding themselves so that they be borne up against it? To this any young sailor can reply. Set your sails properly according to the current; you can go up or down, rise or sink, as you please. Of course in some currents navigation is impossible. I have never seen a bird keep himself upright and at rest in perfectly still water, as seems to be suggested. To do this one would suppose he must hold a stone in his feet, a not very difficult performance. Eagles carry great weights in their claws.

As regards the movements of the dabchick at Zurich, mentioned at p. 215, I wish to say that I could only observe him going down-stream. I think that going up-stream he would use his wings. Whereas a wild duck will fly up-stream under water after his prey, he will drop down-stream in more easy fashion, as the driver of an engine will shut off steam going down hill. A wounded bird will go down-stream, under water, if strong enough to maintain himself so. Your spaniel will be looking for him down-stream.

We have yet a great deal to learn regarding the movements of birds in air and in water. And it follows, from what I have said above, that the time will come when airships will go up wind without the exercise of propulsive force.

Ivy Bridge, South Devon, GILES A. DAUBENY.
October 5, 1903.

63. Eider Duck.—That eider ducks will often become extraordinarily tame while nesting is well known, and I have met with Light-keepers who have told me how they have lifted sitting birds from their nests so that visitors might see the eggs and then replaced the birds, which have continued to sit as if nothing unusual had occurred. When nesting on heathery hillsides above the lochs, however, the eiders are much more shy, and I heard of a very curious habit, which I give in the hope that someone will either refute or affirm it. A crofter told me he had found a donter duck (eider) sitting on four eggs, which he wished to take. It was not, however, convenient for him to do so then, and when he returned two days later he found that the old bird and eggs had vanished. After a search he rediscovered her and the eggs about a hundred yards away down the hillside. He further told me that he once came upon an eider in the act of trundling one of her eggs down hill with her beak, but immediately the bird found she was discovered she deliberately broke the egg and left it. My informant next told me that he had found another nest only two days previously, and I expressed a desire to see it. He kindly took me to the spot, and there remained nothing but a quantity of down! There were no egg-shells to prove that the birds were hatched and no young birds on the loch below (the young are taken to the water almost as soon as they leave the shell), but instead, there was a trail of down distinctly traceable for a considerable distance over the short, scrubby heather. Search as we would, however, we could not discover the bird sitting elsewhere. The incident lends some colour to the story the man told me. Can anyone confirm it?

Bideford, North Devon, A. J. R. ROBERTS.
September 14, 1903.

64. Chiff-chaff.—In spite of one of the coldest and stormiest summers that I can ever recollect throughout my forty years in South Devon, the chiff-chaff is still staying with us and favouring us with his short but very musical song day after day, which we have heard constantly this very morning. I know that sometimes one of these birds stays through the winter, but I have not known him copy the thrush and blackbird in singing so late in such stormy weather, and I thought it would be worthy of notice in NATURE NOTES.

Modbury Vicarage, South Devon, G. C. GREEN.
October 5, 1903.

65. Bullfinches in Bamboo.—A pair of bullfinches built their nest in a bamboo clump in my garden this year. I have had bamboos growing and flourishing very well for some years, and I have always wondered whether any birds would make use of them for nesting in. My garden runs along a much frequented road in Thames Ditton. The particular clump selected by these bullfinches is close to the fence and about thirty yards from the house and on the edge of the lawn. The female was sitting on her eggs before I discovered the nest, and as I believe the bullfinch is a shy bird when nesting, I took great precautions that she should not be disturbed. The brood was safely reared, and I now have the nest at home. One thing that puzzled me was that I never saw the male bird near the nest, so how the lady got food remains a mystery. The nest, though comparatively loosely built, was able to stand very rude gusts of wind which swayed the bamboos about in a very violent fashion on occasions. This is the first nest built in them. I hope it will not be the last.

Rottingdean. J. CAMPBELL.

NATURAL HISTORY QUERIES.

9. Rabbits and Magpies. In the spring I saw a magpie flying about near the ground, about two hundred yards away from me, apparently trying to pick up something that it fancied. But as soon as it came near the spot it seemed to be aiming at, it was chased by a rabbit, which drove it away several times, till at last it flew away discomfited, without attaining its object. Is this common?

Cumberland. E. H.

10. Tortoise and Dog. — Have any of our members had a similar experience to the following. We became the possessors of a tortoise; when our dog, a very intelligent wire-haired fox terrier, saw the newcomer he appeared to have his interest excited to an extraordinary extent. He did not appear to be so much frightened as to have a sort of fascination in watching for hours his new companion. We shall be glad of any information *re* feeding and caring for our tortoise. M. M.

[Most Greek or Moorish tortoises, the kinds mostly seen as pets in England, enjoy juicy plants such as cabbage, lettuce, dandelion or clover, and will eat bread soaked in milk or water. They probably eat no animal food. They love to bask in the sun, but as winter comes on must have access to a heap of mould or leaves where they can burrow beyond the reach of frost.—ED. *N.N.*]

11. Piebald Sparrows.—May I ask through NATURE NOTES whether sparrows are ever "piebald"? Lately, staying in Wensleydale, N. Yorks, for some weeks, I observed a sparrow amidst several others alight daily to feed (with the domestic fowls) which had white feathers from the middle of wings and back as far as half an inch beyond the base of the tail, the wings being edged with a border of brown as thick as a thread. Its legs appeared a fraction shorter than those of the sparrows with whom it came, and it was very tame. It was remarkably pretty.

Hathersage, Derbyshire, ELIZABETH HOPKINS.
September, 1903.

[Such partial albinism is not uncommon.—ED. *N.N.*]

12. Wild Geese.—I saw a very large number of wild geese passing over Charnwood Forest this morning about eleven. There must have been over three

dozen of them, and they were flying in a straight line, not wedge-like, as I thought they always did; but there was no mistake about the "cackle." They were going in a N.E. direction. Is this early, and is it a sign of a hard, early winter?

The Oaks Vicarage, Loughborough. WILLIAM R. TAGART.
October 8, 1903.

[There is a Morayshire rhyme :—

"Wild geese, wild geese, ganging to the sea,
Good weather it will be;
Wild geese, wild geese, ganging to the hill,
The weather it will spill."

There is also a saying that these birds fly in the form of figures which denote the number of weeks of frost that are coming.

If, in North America, wild geese go south in October, but return in great numbers in a few days, it is said to be a sign of a mild winter.—ED. *N.N.*]

13. Late Nesting of the Wood Pigeon.—I do not know whether the following instance is insufficiently uncommon to deserve notice. On September 12, I found, near Kineton, Warwickshire, a nest of a wood pigeon (or cushat) containing one egg. A few days later two eggs were in the nest, but it had been deserted. However, on September 2 I found another nest containing two eggs on which the bird was sitting. Is not this very late in the season?

ERNEST PARKE.

14. Toads.—At this time of the year I frequently come across toads barely a quarter of the normal size; and as they will shortly hide up for the winter, and during hibernation do not take food, they will probably increase very little if at all in size between now and next spring. I do not remember seeing very small toads emerge from hibernation; and wonder what becomes of these dwarfs. Are they unable to survive the ordeal of hibernation?

October, 1903. EDMUND THOS. DAUBENY.

15. Hybridisation.—Have any of our readers ever come across an example of this between the oak and the beech? While on a ramble in Somerset last week one of our party noticed a lot of beech mast beneath an oak tree, and on looking about for the reason saw that the acorns of the oak had for their usual "cup" one that was entirely like the outer covering of the beech nut, covered with spines. Close by was a beech tree.

T. A. APPLETON.

[We are afraid our correspondent's observation is at fault. It was not beech mast that he saw, nor was the acorn cup "entirely like the outer covering of the beech nut." If, as we strongly suspect, the oak was the Turkey or mossy-cup species, *Quercus Cerris*, its cup, though furnished with more or less recurved woody processes, does not split into four segments as does that of the beech, but is and remains cup-shaped.—ED. *N.N.*]

SELBORNE SOCIETY NOTICES.

Council Meetings. — September 28.—The Council having drawn the attention of the Agents General of the Colonies concerned, to advertisements involving the destruction of the rare fauna and flora of Australia, had their several replies under consideration, some of which are noticed in another column.

An interesting agreement between the Audubon Societies of America and Milliners' Association, was brought to the Council's notice.

The usual monthly meeting of the Council will be held at 20, Hanover Square, W., on Monday, November 23 (not third Wednesday as formerly), at 5.30 p.m.; and the Publications Committee on Tuesday, November 10.

New Members.—Miss Furnival, Bishopstone; Col. H. H. Thurlow, Liss; G. Whitehurst Cripps, Esq., Kensington; Miss Winifred D. Wilson, Brondesbury.

Subscriptions.—The Council beg to acknowledge the following subscriptions over 5s.: Rt. Hon. Sir Mountstuart E. Grant-Duff, G.C.S.I., &c., 21s.; F. Alfred Currey, Esq. and Mrs. Currey, £3 3s.; G. Whitehurst Cripps, Esq. (two years), £1 5s.

NEWS FROM THE BRANCHES.

Clapton (Lower Lea Valley).—The opening meeting of the Session 1903-4 was held at Sigdon Road School, on Saturday, October 17.

One of the Vice-Presidents of the Branch, Mr. Chas. Nicholson, F.E.S., read an instructive paper on "Bog Plants," which was rendered more interesting by the exhibition of a number of growing specimens.

After a hearty vote of thanks had been accorded to Mr. Nicholson the meeting resolved itself into the usual informal social gathering.

East Riding.—An afternoon meeting was held on October 8, in the Gymnasium of the Pocklington Grammar School, by permission of the Rev. C. F. Hutton, the Headmaster, under the chairmanship of the Rev. W. D. Wood Rees, the Honorary Secretary of the Branch. Addresses were given by the Revs. M. C. F. Morris, Rector of Nunburnholme; A. Bolland, Vicar of Hayton; C. F. Hutton, and the Chairman.

FIELD CLUB RAMBLES.

September 12, 1903. Winchmore Hill and District. Leader, Oliver G. Pike. The Selbornians who attended this ramble had a most enjoyable walk through Winchmore Hill Woods and some of the prettiest lanes of the neighbourhood. The day looked threatening, but those who ventured out were amply repaid, for the afternoon turned out bright and it was an ideal autumn day for a stroll. The leader chose one of the most delightful walks to be found in this beautiful spot of Middlesex, which has rightly been christened "Bird-Land" by him in his books. The party intended to continue the ramble after a most enjoyable tea, but a heavy shower of rain prevented this and they returned to town.

September 20.—Epping Forest. Twenty-nine Selbornians met at Chingford Station for a ramble through Epping Forest. The weather was all that could be desired, bright warm sunshine, tempered by a cool breeze. Leaving the station the party crossed the grassy, uneven Chingford Plain, where the absence of trees and marks of old furrows show that the land, now "the people's own for all time," was once arable and under the plough. Fairmead thicket was entered and crossed by one of the many grass rides which intersect the denser parts of the Forest. The thicket opens again and again into grassy glades, which form a perfect paradise for wild flowers in the spring and summer, while at this season of the year the scarlet hips of the rosebushes and the brilliant tints of the autumn leaves make up for lack of flowers. Great quantities of dewberry and blackberry fruits were in evidence, but these required a few more days of sunshine and some pinches of frost to make a veritable harvest for the blackberry gatherers. After leaving Fairmead, the ramblers, by bearing to the right, made a complete circuit of High Beach, emerging by the furze-bush bank near the church. The great feature of the walk through the beechwoods, as well as through the thicket, was the numerous specimens of interesting fungi met with. Among the beech mast and leaves on the floor of the wood the fungi seemed to assume every tint, from the exact colours of the decaying leaves to dainty lemon and orange yellows, rich heliotrope, and brilliant scarlet. A glistening cluster of ivory-white fungi on a beech trunk attracted much attention, but all agreed that this fungus (*Armillaria mucida*), although said to be of a delicate flavour when cooked, did not look as though it could be trusted.

The absence of bird song lent a singular stillness to the woods. Here and there a jaunty robin trilled forth his autumn carol, but the song seemed to end in a sad little refrain, as though he too regretted that summer had gone. A beautiful jay flew from tree to tree and allowed a very good view of himself to the ramblers. After a short interval for tea, a walk was taken to the summit of the hill for the view. But the warmth of the afternoon showed itself in a blue haze, which quite hid the beauties of the Lea Valley below. The return walk was by Leppit's Hill and across the meadows towards the "Woodman."

In one part of the homeward walk owls called and answered each other with their well-known hoots from the margins of the woods; bats showed themselves in their zig-zag flight across the sky-line; beetles blundered along in ungainly flight, and night moths on airy wing appeared for a moment and then vanished. The station was reached in due course, when all agreed that the ramble had been a most enjoyable one.

September 26.—Some five and twenty members assembled at Oxted Station for the last ramble of the season, which was under the leadership of the Editor, who had his accustomed fine weather. The route followed was precisely that of the first section of Route VIII. in the East Surrey series of "Field-path Rambles," and proved both interesting and beautiful. By the kindness of E. S. Taylor, Esq., we

OXTED CHURCH.

ANCIENT HIGHWAY, MARDEN PARK.

are able to illustrate this report with two views of points *en route*. Passing in front of Barrow Green House, with its many literary associations with Bentham, Mill, and Grote, we ascended the face of the escarpment of the North Downs by Hogtrough Lane. Near here the find of the day, *Anagallis cærulea*, was made, whilst the *Gentianaceæ* were well represented by *Erythræa*, *Blackstonia* and *Gentiana Amarella*. *Campanula glomerata* was also abundant. Passing through Marden

Park by the Rumps path, and a much-contested right-of-way, just as a glorious setting sun was showing itself through the fine beeches, and the multitudinous rooks of one of the largest rookeries near London were coming noisily home to roost, we ascended the western slope of the dry Chalk Valley in which the park lies, only to have to cross another narrower but parallel valley to Tillingdown Farm. Daylight failed us as we once more descended a steep slope which led us into Caterham Valley, where a welcome tea at the Railway Hotel and a vote of thanks to the conductor terminated a very enjoyable afternoon.

October 24.—By the courtesy of the Essex Field Club the members of the Selborne Society were able to join in the Annual Fungus Foray in Epping Forest. Fortunately the afternoon was free from rain, and the party met at Loughton, and under the guidance of Mr. B. G. Cole proceeded by way of Staples Pond and Loughton Camp to High Beach. Some ninety species of fungi were found. After high tea at the Kings Oak a most interesting meeting was held. Dr. M. C. Cooke read a paper on "Edible Fungi," introducing many personal reminiscences of his early difficulties when starting the study of mycology half a century ago; after which Mr. George Massee described the finds of the day and gave a highly instructive short lecture on "Some Points in the Life History of a Parasitic Fungus," illustrating the various stages by coloured diagrams. After a short discussion the meeting adjourned and members walked to Loughton, thus pleasantly ending a delightful outing.

SELBORNE SATURDAY AFTERNOONS.

November 14.—Botanical Gallery, Natural History Museum, Cromwell Road. Assemble in the Central Hall at 2.30 p.m. Professor Boulger will give a Demonstration.

November 28.—Westminster Cathedral, Ashley Gardens, S.W. Assemble at the main (temporary) entrance at 2.30 p.m., to meet Mrs. Myles. Admission 6d. each. A competent guide will be in attendance to explain the architectural features of the building.

ANSWERS TO CORRESPONDENTS.

W. A. Dutt.—Your plant appears to be merely fennel (*Foeniculum vulgare*).

Frank Vine.—*Vanessa polychloros*, though far less common than the smaller *V. urticæ*, is not uncommon, and seems rather on the increase. It is confined to the Eastern, Midland and Southern counties, and belongs rather to July and August. The larva feeds mostly on elm. Its market value would be very small.

LETTERS RECEIVED.

From J. Russell Larkly, W. Johnson, R. V. Harris, Mrs. Routledge, E. M. Sanderson, R. T. Nichol.

NOTICES TO CORRESPONDENTS.

1. All communications for NATURE NOTES must be authenticated with name and address, not necessarily for publication.

2. The return of an unaccepted contribution can only be guaranteed when it is accompanied by a stamped and addressed envelope. We cannot undertake to name specimens privately, to return them, or to reply to questions by letter.

3. All communications for any number must be in the Editor's hands by the 10th of the preceding month.

4. Communications for NATURE NOTES, books for review, specimens for naming, &c., should be addressed to the Editor, PROFESSOR BOULGER, F.L.S., F.G.S., 11, Onslow Road, Richmond, Surrey.

5. For the supply of the Magazine to others than members, or for back numbers (except in the case of new members), address the publishers, with stamps at the rate of 2½d. per number, Messrs. JOHN BALE, SONS AND DANIELSSON, Ltd., 83-89, Great Titchfield Street, London, W.

6. Letters connected with the business of the Society, subscriptions, &c., should be addressed to the local Secretary, or the Secretary to the Society, Mr. R. MARSHMAN WATTSON, 20, Hanover Square, W.

Nature Notes:

The Selborne Society's Magazine.

No. 168. DECEMBER, 1903. Vol. XIV.

OBJECTS OF THE SOCIETY.

To preserve from unnecessary destruction such wild birds, animals and plants as are harmless, beautiful, or rare. To discourage the wearing and use for ornament of birds and their plumage, except when the birds are killed for food or reared for their plumage. To protect places and objects of antiquarian interest or natural beauty from ill-treatment or destruction. To promote the study of natural history.

SELBORNIANA.

Hampstead Heath Protection. — The following correspondence between the Chairman of our Council and the London County Council testifies to the importance of continual watchfulness on the part of our local branches. Mr. Avenell writes on behalf of the Hampstead Branch :—

"Hampstead Heath,

"*October* 6, 1903.

"Sir,—I am directed by the Committee of the above Society to invite your consideration of the following circumstances.

"A well-known paper is publishing a story in connection with which it is announced that five separate sums of £100 have been hidden in different parts of the country; and in the paper's issue of the 3rd inst., there is an oblique allusion to the north-west district which has induced numbers of people to visit Hampstead in quest of the so-called hidden money. Digging and delving under trees is consequently widely in progress, with results that cannot fail to be very injurious to the amenities of the Heath, to say nothing of the demoralising effect upon

people so occupied. As a Society interested in the conservation of Nature we trust that directions may be sent to your officials upon the Heath rigorously to repress the diggings and delvings to which I have alluded.

"The Pryors, East Heath.

"The construction of the flats upon this site has now gone far enough to enable one to realise how great will be the disfigurement to the Heath. I am instructed by my Committee to ask whether numbers of quick-growing trees, such as limes, poplars, and planes cannot be planted upon the Heath near these flats, so as to be some kind of screen or foil to their ugliness.

"I have the honour to be your obedient servant,

"Geo. Avenell.

("*Chairman of Committee.*)

"*The Chairman of the Parks Committee,*
"*London County Council.*"

"London County Council,
"County Hall, Spring Gardens, S.W.,
"*November* 10, 1903.

"Sir,—With reference to your letter of the 6th ult., addressed to the Chairman of the Parks Committee, suggesting that, in order to screen the blocks of flats which are now being erected on the site of the Pryors, a number of quick-growing trees should be planted on Hampstead Heath, I am directed to inform you that some members of the Parks Committee, upon a recent visit to the Heath, considered your suggestion, and instructions have now been given for a number of trees to be planted to the north-east of the site in question.

"With regard to the reference in your letter to the damage which was being done on the Heath by persons digging for supposed hidden treasure, every endeavour was made by the staff to detect offenders, and one person who was found digging on the Heath was prosecuted.

"I am, Sir, your obedient Servant,
"(Signed) G. L. Gomme,
"(*Clerk of the Council*).

"G. Avenell, Esq.,
"*The Selborne Society.*"

Bullfinches in Hats.—Among other letters we have received the following from Lady Jenkyns:—

"In several towns lately I have seen in shop windows hats with eight little bullfinches sitting spread out in a circle. Can any one who has also seen them tell me if they are French birds? They are smaller than our bullfinches; the red is not so pink, and they have no white patch on the back. Is it merely that they are young ones? In one shop there was a hat like this, but all the birds were dyed black. I hoped that the

coloured ones might be painted sparrows, but their beaks are too short. Will nothing stop this murderous millinery?"

Animal Protection in New South Wales.—We are glad to hear that a Bill has passed in the New South Wales Assembly, and been read a second time by the Council, providing that opossums, kangaroo, and other native animals shall be absolutely protected until January, 1905, and after that date there is to be a close season every year covering six months, from August 1 to January 31.

Miss Carrington.—We have received the following letter from "One of the People" with reference to the appeal printed in our November number:—

"All lovers of animals must feel indebted to you for generously inserting an appeal on behalf of a noble writer who has been untiring in her labours in teaching the needs and structure of defenceless creatures of the so-called brute creation.

"Dr. Kingsford teaches that 'The essential of true justice is the sense of solidarity. All creatures, from highest to lowest, stand hand in hand before God. Nor shall we ever begin to spiritualise our lives and thoughts, until we recognise this soildarity, until we learn to look on the creatures of God's hand, not as mere subjects of hunting and butchery, but as living souls with whom, as well as with the sons of men, God's covenant is made."

"We owe Miss Carrington great reverence for her efforts to raise this high standard of justice and mercy, and I believe she deserves some sacrifice to aid her now in her sore need and distress. May I remind all lovers of birds and beasts who may wish to send some help for her who has worked for them, that Miss Oakes, 6, Colville Houses, Talbot Road, Notting Hill, will thankfully receive and acknowledge contributions for the E. Carrington Fund."

Dunfermline's Opportunity.—*The Dunfermline Press* for November 7 and 14, contains a full report of the advice which Canon Rawnsley has been giving the town, as to the most judicious way in which it can set to work to spend Mr. Carnegie's princely gift in beautifying its surroundings. It is very rarely that such an opportunity comes to any community, and the people of Dunfermline will do well to pay close attention to so competent an adviser as they have in the Canon.

Lantern Lectures.—The Secretary of the Children's Department of the Humanitarian League reminds us that the season for Band of Mercy meetings has again come round, and that printed lectures, with coloured lantern slides, may be had on loan for a small charge. Two of the lectures, viz., "The Horse" and "The Cat," have been revised since last season, and many new slides added.

She suggests that some of our workers may like to avail themselves of the opportunity to purchase, for their own use, some of the surplus slides at half-price, particulars of which can be obtained by writing to Miss Wade, at the *Animals' Friend* Office, 6, York Street, Covent Garden, London, W.C.

Swanley Horticultural College.—A crowded and influential drawing-room meeting in connection with this College, was held by permission of Lord Brassey at his house in Park Lane, on October 28, Lady Brassey being in the Chair. An address was given by Mr. A. D. Hall, of Rothamsted, and a resolution proposed by Sir John Hibbert, and seconded by Mr. J. C. Medd, calling upon the Government to apportion some of the Board of Agriculture Grant to colleges of horticulture and agriculture for women students, was carried unanimously.

THE NATURE STUDY EXHIBITION.

S was most fitting, the members of the Selborne Society took an active part in promoting the Home Counties Nature-Study Exhibition which has just been held with such success. The following were the delegates, officially appointed by the Council, to serve on the General Committee: Mr. George Abbott, Mr. George Avenell, Professor Hulme, Mr. A. H. Macpherson, Mr. E. A. Martin, F.G.S., Dr. Bowdler Sharpe, and Mr. R. Marshman Wattson. No less than seven of the members appointed by the Middlesex Field Club were officers or councillors of the Selborne Society, and included Lord Avebury, D.C.L., F.R.S., and Mrs. Brightwen, F.Z.S., F.E.S.

In the end the Selborne Society was represented on the Executive Committee by Mr. George Avenell (Chairman of the Council), Professor Boulger, F.L.S., F.G.S. (Vice-President and Editor); Mrs. Percy Myles (Vice-President), Mr. Wilfred S. Durrant, Mr. Hedger Wallace, Mr. E. A. Martin, F.G.S. (Members of Council), and Mr. Wilfred Mark Webb, F.L.S. (Honorary Librarian), who acted as the Honorary Secretary of the Exhibition.

By the courtesy and kindness of the Civil Service Commissioners and His Majesty's Office of Works, the Exhibition was held in the offices of the former (which were once the buildings of the London University) in Burlington Gardens.

A very representative series of exhibits was brought together, which showed that the real meaning of Nature-study is rapidly becoming understood. There was no overwhelming amount of work in school science which often poses as nature-study and in which systematic considerations are added to purely observational work. The exhibition of collections was not invited

unless these had been made with some definite and legitimate purpose. It is folly to shut our eyes to the immense value of collections in scientific work, but it may be said at once that those who imagine that the amassing of specimens is the aim of Nature-study, are falling into an error of their own making. Collections of common objects may usefully serve as records of Nature work which takes certain directions, but the result to be looked for is an appreciation of useful and rare creatures which will lead to their protection. It would be quite possible to bring forward many actual instances of the influence that Nature-study has in this direction, but we will only consider that alluded to by Mr. Bradley, (one of the judges) at the conference, when he mentioned the surprising number of nests watched and warded by the scholars of Stanbury, from which young birds successfully flew.

It may be of interest to state that the Council of the Selborne Society contributed three prizes of a guinea each, while the Hampstead Branch, Mrs. Brightwen, and Mr. Wilfred Durrant offered others of similar value. These were awarded as follows :—

Selborne Society's Prizes.—For paintings from natural objects by a pupil: to Miss Clark Kennedy, Ewhurst Rectory, Guildford. For an illustrated description of a ramble, by a pupil: to Miss Jehanne Minchin, Streatham High School. For an illustrated visit to a good museum, by a teacher: to Miss Rachael Richmond, of the Froebel Institute.

Prize of the Hampstead Branch.—For an illustrated description of the work of a School Natural History Society (open): to Mr. W. J. Lucas, B.A., F.E.S., Tiffin's Boys' School, Kingston-on-Thames.

Mrs. Brightwen's Prize.—For an illustrated account of a Visit to the Headland at Newquay: by Miss Gwendoline Hine, Clapham High School.

Mr. Wilfred Durrant's Prize.—For a Nature note-book: to Miss Annie Primrose Farren, Bealings House, Woodbridge.

The fact that Lord Avebury, Chairman of the Committee of the Exhibition, was ill and unable to be present at the opening ceremony caused much sorrow and disappointment. Sir Henry Howorth kindly presided, and Sir John Cockburn declared the Exhibition open. Sir John Cockburn, in the course of a characteristic speech, said that Nature-study is not a new subject, but a new way of looking at all subjects as they are, and not in the light of old pedagogic methods.

Mr. Hedger Wallace (Chairman of the Executive Committee of the Exhibition) presided over the first of the conferences, which were specially arranged for teachers, and at which teachers of all kinds gave addresses. Perhaps out-door work was more strongly advocated than ever before. At the second conference Mr. Jesse Collings took the chair, and gave an interesting account of the aims of the bill which he now has

before Parliament. This is intended to make Nature-study compulsory instead of permissible in elementary schools. While regarding the economic aspects of the matter, Mr. Jesse Collings by no means minimizes the purely educational value of Nature-study, and there is little doubt but that the measure will pass unopposed.

What photography can do in the way of portraying Nature was particularly well shown with illustrated lectures by Messrs. Kearton, Lodge and Pike. Their pictures showed most beautifully how a creature appears at the moment of exposure, while the Urban - Duncan Microbioscope, described by Mr. Martin Duncan himself on two occasions, brought before the audiences continuous photographic records of such things as *Hydra* and *Volvox*, and the circulation of protoplasm under the microscope, as well as chameleons and toads feeding.

One evening was devoted to a meeting of the Selborne Society, at which Mr. George Avenell (Chairman of Council) presided. Professor Boulger delivered an address on the "Study of Living Plants," illustrated by some very beautiful photographs, urging that at all seasons the observation of plants living amid their natural surroundings might be so encouraged as to create a love of Nature.

Afterwards Mr. E. A. Martin spoke on "Open Spaces and Green Fields," and gave a very interesting account of the origin of common lands and the various ways by which lords of the manor and others had got possession of them.

Thanks to numerous subscribers and the good attendance of visitors at the Exhibition it has proved a financial success.

Steps are being taken to hold another Exhibition in 1904, which will not be confined to the Home Counties, and a Nature Study Society is being formed for the purpose. This already includes a number of prominent Selbornians among its members and full particulars may be obtained from the undersigned at 20, Hanover Square.

WILFRED MARK WEBB.

REVIEWS AND EXCHANGES.

Bird Life in Wild Wales. By J. A. Walpole-Bond. Illustrated with photographs by Oliver G. Pike. T. Fisher Unwin. Price 7s. 6d.

Sportsmen, when not actually engaged in the chase, are fond of recounting their former achievements, and so it is with the new sportsmen of the camera. Mr. Walpole-Bond, with no indiscreet revelation of exact localities, takes us for some exciting ornithological tramps in Wales, especially to the haunts of the kite, the buzzard, and the raven. It is somewhat comforting to read his assurances of the safety of these moribund species as recently as 1902. Transcribing his diary, the author occasionally wastes space over uninteresting trivialities and we wish he would have given an index to his book. There are sixty illustrations in the volume, almost all from the skilled camera of Mr. Oliver G. Pike. That of the kingfisher strikes us as of exceptional excellence,

whilst that of "A Sitting Nightjar" is a bewildering puzzle of protective resemblance. One can only ask "Where is the Nightjar?"

Nature's Riddles, or the Battle of the Beasts. By H. W. Shepheard-Walwyn. With a coloured plate and over 100 illustrations by the Author. Cassell and Co. Price 6s.

We hardly think Mr. Shepheard-Walwyn, whose name is new to us, has been successful in his choice of titles for this attractive volume. The riddles which he attempts to solve are almost all of them those of the protective colouring, forms and postures of animals, and he deals not only with beasts but also with reptiles, birds and insects. There is no more fascinating, no more inexhaustible a topic in the whole modern study of Nature, and the author tells his story simply and accurately in "a tongue understanded of the people" and likely to interest any

ORANGE-TIP BUTTERFLY RESTING ON HEMLOCK FLOWERS.
(From "Nature's Riddles," by permission of Messrs. Cassell and Co.)

reader, while his excellent original illustrations admirably enforce his argument. One of these we are able, by the courtesy of the publishers, to reproduce here. The coloured frontispiece of the Leaf-insect is an excellent specimen of colour-printing. We would specially direct the attention of young entomologists to Mr. Shepheard-Walwyn's cautions against handling hairy caterpillars, or coming within reach of the formic acid ejected by that of the Puss moth.

Nature, Curious and Beautiful. By Richard Kerr. With 69 Illustrations from drawings by the Author. Religious Tract Society. Price 3s. 6d.

At an earlier stage of mental development a child may prefer the want of system of the old raree-show type of museum to a volume as systematic as that of which we have just been writing. Such a collection of curiosities Mr. Kerr gives us in this little book. Ranging from the monkey's dinner-bell (*Hura crepitans*)

and insectivorous plants, to edible bird's-nests, flexible sandstone and meteorites, we were on the point of dismissing the book as a child's guide to the Natural History Museum, excerpted from the best modern authorities, when we lit upon the interesting original observation which is illustrated by the accompanying figure. These rings are, it seems, formed by the clay-logged seed-vessels on the top of the stems of wiry grass as they gyrate in the wind, weighed down as they

MECHANICAL PRODUCTS OF NATURE.

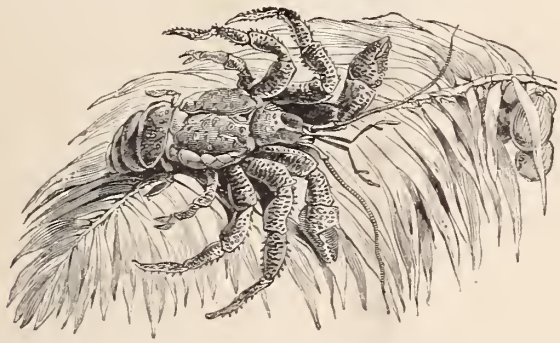
(From "Nature, Curious and Beautiful," by permission of the Religious Tract Society.)

are in the white mud on flooded meadows by the Shannon. The language is not always simple enough for a "reader" for children under twelve; but if read to them and explained, we know of no work which would serve so well as a preparation for a visit to our national Natural History Museum.

Popular Natural History of the Lower Animals (*Invertebrates*). By Henry Scherren. With 168 illustrations. Religious Tract Society. Price 3s. 6d.

One of the objects of the Selborne Society is to promote the study of natural history. The technical work of the anatomical laboratory may not be to everyone's taste; but everyone probably would, if given the least opportunity, develop an interest in living beings; and it is this interest in living plant or animal that we wish to encourage. Mr. Scherren has shown himself admirably fitted as a writer for this missionary work. Most popular "Natural Histories," as he says, deal at length only with the higher, *i.e.*, the vertebrate animals; but he has found plenty to do in compressing a readable account of the invertebrates into a volume of less than three hundred pages. He, as we think, wisely gives his readers, most of whom may be expected to be juvenile, but a small modicum of

anatomical detail, whilst frequent quotations from travellers and trustworthy out-door naturalists fill his pages with interest. Who, for instance, can fail to realise better the work of the scavengers of nature when he reads of a dead duck falling into the water and being devoured in five minutes, with the exception of skin, feathers, and—we presume—bones, by the water-beetles (*Dytiscus*)? So too may



ROBBER CRAB ON PALM-BRANCH.
(From "Natural History of the Lower Animals," by permission of the Religious Tract Society.)

the possibilities of evolution be the better realised when, reading of Semper's discovery that certain crabs have their gill-cavities modified into lungs, we see this picture of a robber-crab on a palm-branch. We have seen few books this autumn that would, at the price, make so pleasing a Christmas gift to boy or girl, though in deference to what we have learnt is the taste of the young naturalist, Mr. Scherren might in his next edition, give us Latin as well as English names.

Animal Studies. By David Starr Jordan, Vernon Lyman Kellogg, and Harold Heath. Twentieth Century Text-books. Appleton and Co. Price 5s. net.

This, at a less price than either, and issued by a different publishing house, is a combination of the salient features of *Animal Life* and *Animal Forms*, volumes by the same authors which we have noticed on previous occasions. It is thus a compact treatment of zoology, both ecological and morphological, in a single volume, and occupies, as a high-school text-book, a position previously unfilled. Room has been found for new chapters on the principles of classification, the uses of animals and extinct forms. These are as explicit, as complete, and as interesting as are the chapters taken from the previous volumes, though it is hardly possible to dismiss some points of zoological nomenclature as simply as is here attempted. "The authority usually written after the name of an animal is that of the one who gave it its specific name," say the authors, "thus, *Sciurus hudsonicus* Erxleben, which means that Erxleben first called it *hudsonicus*." Strictly speaking, the authority is that for the collocation of the two names, which, by the way, is a "binominal," not as the authors style it, a "binomial" system. So too in writing of synonyms, the authors say: "When several names are given to the same animal they are called synonyms. The earliest of these names is the right name. All the rest are wrong." This would set us delving into the mustiest of antiquarianism with a vengeance. But perhaps the necessarily terse didacticism of a school book may excuse such slight over statements.

Morphology of Spermatophytes. By John M. Coulter and Charles J. Chamberlain. Appleton and Co., 1903.

Morphology of Angiosperms (*Morphology of Spermatophytes*), Part II. Some authors and publishers. Price 10s. 6d., net.

Messrs. Coulter and Chamberlain, in their endeavour to present the latest results of morphological research—or their publishers—have produced a misleading

title-page, that of the first of these two volumes. It was first published in 1901, with no indication, save in the table of contents, that it was only the first part of the work and dealt exclusively with Gymnosperms. It is now re-issued without alteration, save the date on the title-page, and still without an index. Nevertheless, in the Preface to the second volume, dated January, 1903, the authors say "It was our purpose to issue as a second part an account of the Angiosperms, which would also contain a complete index of the whole work. We have become convinced, however, that such an association of these two great groups would help to emphasise a relationship that does not exist, and that Gymnosperms and Angiosperms should be treated as independent groups, co-ordinate with Pteridophytes. Therefore, the present volume is issued, not as Part II. of *Morphology of Spermatophytes*, but as an independent volume entitled *Morphology of Angiosperms;* and any subsequent edition of the previous volume will be entitled *Morphology of Gymnosperms*." Both volumes are excellent morphological studies with full and separate bibliographies to each section. This is not the place for a detailed review of them; but the present writer is still of the opinion expressed by him in a short paper in the *Journal of Botany*, not here quoted, that it would be better to drop so ambiguous a term as "endosperm." Engler's main groups are adopted and explained.

Notes from a Lincolnshire Garden. By. A.L.H.A. Elkin Mathews. Price 2s. 6d., net.

This neat little brochure contains more poetry than gardening, though there is much gossipy appreciation of garden flowers, and the whole is readable enough. It is divided into four seasonal sections, and the following passage from "Autumn" happens to bear on a topic recently touched upon in our pages:—

"Beloved, too, of butterflies is a certain humble plant that flowers now in the kitchen garden borders. It is the *sedum spectabile;* and sunning themselves and feeding upon its flat trusses of dusky reddish bloom, I have counted as many as eight Red Admirals, four Tortoiseshells, and two Peacocks upon a single plant." Why will the authoress put a "the" before the names of plants and—worse still—begin their generic names with a small letter?

Sweet Hampstead and its Associations. By Mrs. Caroline A. White. Second Edition, revised. Elliot Stock. Price 7s. 6d. net.

This is a smaller edition, at half the original price, of an attractive description of our most beautiful "Northern Height." The authoress does not seem to be acquainted with the natural history of Hampstead, edited by Professor Logan Lobley, and her list of plants still contains some errors, such as *Gallium*, and archaisms, such as *Hyacinthus non-scriptus*. An interesting appendix on the Boydells has been added, and all the original illustrations are given.

Leicester Corporation Museum and Art Gallery. Thirteenth Report, 1890-1902.

Though including twelve years' work, this report, containing, as it does, 290 pages of additions to the collections, is one of which any museum might be proud. Few museums, however, could afford to print such a catalogue; for it is not a catalogue of the collections, but only of recent additions thereto. Its compilation and production reflect credit upon all concerned, but we wish the pages had not Roman numerals for pagination.

Received:—*Hastings and St. Leonard's Natural History Society, Tenth Annual Report; Wheat-fields and Industries of Northern Quebec; Board of Agriculture Leaflets*, No. 91, *The Pine Beetle* (*Hylesinus piniperda*); No. 94, *Millipedes and Centipedes;* No. 95, *Ringworm in Cattle;* No. 96, *Parturient Apoplexy; Bird-Lore*, vol. v., No. 2, March-April, and No. 3 May-June; *The American Botanist* for August and September; *The Victorian Naturalist* for September and October; *The Indian Textile, Mechanical and Electrical News* for October; *The Naturalist, The Irish Naturalist, The Humanitarian, The Animals' Friend, The Animal World, Our Animal Friends, The Agricultural Economist*, and *The Commonwealth* for November.

SELBORNE SOCIETY NOTICES.

Council Meetings.—At the Council Meeting held on October 26, it was agreed to make a collection of all the Wild Bird Acts and Orders, for the United Kingdom, for reference. The reports of experts, with reference to birds in hats, were also considered and the Chairman and Secretary were asked to compile, for publication in the press, a report on same. It was agreed to write the London County Council with reference to the preservation of London Squares.

The usual monthly meeting of the Council will be held at 20, Hanover Square, W., on Wednesday, December 30, at 5.30 p.m.; and the Publications Committee on Tuesday, December 8.

New Members.—Mrs. E. M. Ord-Marshall, Westminster; Miss A. Coombe Hatch, Willesden Green; Mrs. A. L. Sandford, Merton Park; R. E. J. Stone, Esq., Oxford; Mrs. Alice Kemp, Putney; C. F. Heale, Esq., Hampstead; Colbron Pearse, Esq., Hampstead; Mrs. W. H. Gillett, Highgate; Miss Ross, West Hampstead; Mrs. Sinclair Clarke-Knedlington, Howden; Rev. J. Bolland, M.A., Hayton; H. Green, Esq., Howden; Dr. Chestnut. Howden; H. Gamble, Esq., Upper Clapton; H. J. Gamble, Esq., Upper Clapton.

Subscription.—The Council beg to acknowledge the following subscription over 5s. R. E. J. Stone, Esq., Oxford, 21s.

NEWS FROM THE BRANCHES.

Bath.—The following lectures have been arranged for the winter:—

October 30.—"Rationality of the Infra-human Animals," W. Bromham, Esq.

November 13.—"Emotion in the Infra-human Animals," W. Bromham, Esq.

November 30.—"What the Arm-chair Botanist sees," Miss Bryant.

December 11.—Paper, illustrated by lantern slides, 8 p.m., "Dwellers by the Seashore," Miss C. Pedder.

February 1, 1904.—Section Meeting at 8 p.m., "The Larva of the Chironomus Fly," Miss Blathwayt.

February 19.—Literary and Philosophical Soirée, "Rood Screens." Illustrated by lantern slides, F. Bligh Bond, Esq., F.R.I.B.A.

March 11.—Illustrated Lecture at 8 p.m., "Work of the Woods in Bath," Mowbray Green, Esq., A.R.I.B.A. Selborne Members are free to all the above meetings. Non-Members are charged one shilling to Lectures, and sixpence to Section Meetings.

The proceeds of the first two Lectures will be given in aid of the National Society for the Prevention of Cruelty to Animals.

Lectures will be given in the Lecture Hall of the Royal Literary and Scientific Institution; Section Meetings in the Selborne room.

Birmingham and Midland.—A very interesting lecture was given on Tuesday, November 17, by Mr. T. H. Russell, on "Moss Life," to a large and appreciative audience. The lecturer traced the life history of a moss through all its stages, and showed how beautifully Nature provided for the dissemination of the spores. The lecture was illustrated by lantern slides from original drawings by the lecturer. One of the members of the Society kindly lent his large music room for the occasion.

East Riding.—The Rev. W. D. Wood Rees, Hon. Secretary, gave lectures on behalf of the Society at Howden, on November 2, and Barnely-Moor on November 4. The subjects were, "Birds that would visit or settle with us if not cruelly shot," and "Birds the Farmers' Friends." The lectures were beautifully illustrated with lantern slides of "Birds in their Native Haunts."

Hampstead.—On November 16, Professor J. Logan Lobley, F.G.S., delivered a lecture to the members of the branch at the Town Hall, Haverstock Hill, on "Volcanoes, Earthquakes, and the West Indian Eruptions," illustrated by diagrams and lantern slides. The lecturer had an attentive and appreciative audience, and at the close of his address a hearty vote of thanks was accorded to him. Mr. W. Lane Claypon occupied the Chair.

SELBORNE SATURDAY AFTERNOONS.

November 14.—Prof. Boulger being prevented by illness from giving his promised demonstration in the Botanical Department of the Natural History Museum, Mr. W. P. Pycraft kindly consented at short notice to lead the party of Selbornians round the Bird Department. In an admirably clear manner he showed many interesting instances of special adaptation to environment and habit, pointing out how in diving birds the legs are placed far back under the body so as to obtain the most efficient leverage, how in running birds the legs are strongly developed while the wings are atrophied from neglect of use, and how in birds living in swamps the nostrils are placed near the tip of the long beak to aid them in finding their food under the mud. Many other instructive details were learned from Mr. Pycraft's commentary on specimens in the cases visited, and his audience listened with a lively interest. A hearty vote of thanks was given by all present.

December 12.—Botanical Gallery, National History Museum, Cromwell Road. Assemble in the Central Hall at 2.30 p.m. Professor Boulger will give the demonstration which he was prevented by illness from giving on November 14.

December 19.—(Hampstead Branch) Ancient Halls of the City Guilds. Brewers' Hall, Addle Street, Wood Street, E.C. Guides, Mr. H. Plowman, F.S.A., Mr. Geo. Avenell. Meet at 2 p.m. Barber-Surgeons' Hall, Monkwell Street, E.C. Guide, Mr. Sidney Young, author of the "Annals of the Barber-Surgeons." At 3 p.m.

N.B.—Any members of the Selborne Society may join the party.

ANSWERS TO CORRESPONDENTS.

S. P. H.—I can, I fear, make no useful suggestion as to the malformed turnip, nor did I get much help, owing to the scanty nature of the evidence, from the Scientific Committee of the Royal Horticultural Society. It looks like rupture from too rapid growth.

J. Randall Peach.—It is of the essence of the "Nature-Study" movement that scholars should learn not from books but from their own observations. The only books, therefore, required for their use are Nature calendars, diaries, or drawing-books, in other words, blank books in which to record these observations. As guides to teachers situated like yourself, I would recommend Dr. Hodge's "Nature-Study and Life" (Ginn and Co., 7s.), which suggests graded lessons; Canon Steward's "Nature Students' Note Book" (Constable and Co., 2s.), which suggests other books; Mrs. Wilson's "Nature-Study in Elementary Schools" (Macmillan and Co.); Messrs. Buchanan and Gregory's "Lessons on Country Life" (Macmillan and Co., 3s. 6d.); and Mr. Hackwood's "Object Lessons in Natural Knowledge" (Longmans, 3s. 6d.).

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2. The return of an unaccepted contribution can only be guaranteed when it is accompanied by a stamped and addressed envelope. We cannot undertake to name specimens privately, to return them, or to reply to questions by letter.

3. All communications for any number must be in the Editor's hands by the 10th of the preceding month.

4. Communications for NATURE NOTES, books for review, specimens for naming, &c., should be addressed to the Editor, PROFESSOR BOULGER, F.L.S., F.G.S., 11, Onslow Road, Richmond, Surrey.

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6. Letters connected with the business of the Society, subscriptions, &c., should be addressed to the local Secretary, or the Secretary to the Society, Mr. R. MARSHMAN WATTSON, 20, Hanover Square, W.

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